

USER GUIDE

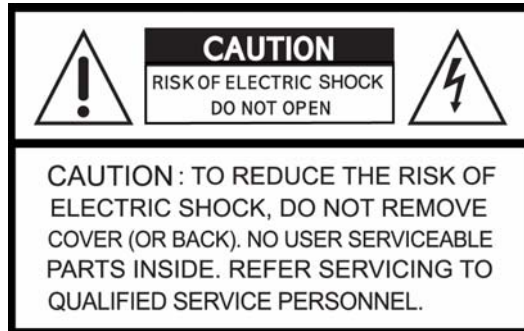
4CH TRIPLEX

DIGITAL VIDEO RECORDER

Version. 3.0

Design and specifications are subject to change without notice.

SAFETY PRECAUTIONS



EXPLANATION OF SYMBOLS



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.



This symbol is intended to alert the user to the presence of unprotected “dangerous voltage” within the product’s enclosure that may be strong enough to cause a risk of electric shock persons.

CAUTION

THIS PRODUCT IS MULTIPLE RATED VOLTAGES (110V AND 220V).

SEE INSTALLATION INSTRUCTIONS BEFORE CONNECTING TO THE SUPPLY

THIS PRODUCT BEARS LITHIUM BATTERY.

RISK OF EXPLOSION IF THE BETTERY ON THE MAIN MOARD IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

THIS EQUIPMENT IS INDOOR USE AND ALL THE COMMUNICATION WIRINGS ARE LIMITED TO INSIDE OF THE BUILDING

TO REDUCE THE RISK OF FIRE ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

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WARNING

The authorized expert must install DVR. When connecting a camera, audio, or sensor cables DVR should be turned off first.

Please be aware that the company is not responsible for the damages caused from using unauthorized goods and not following the instructions from the manual.

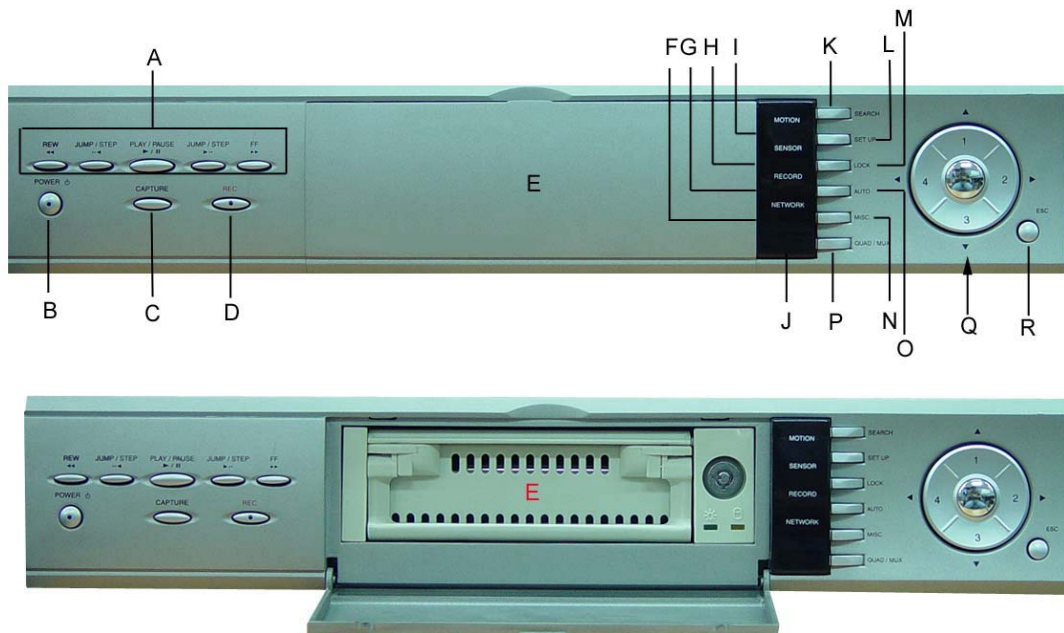
The company is also not responsible for the errors caused after the user has opened up DVR for an arbitrary fix or the user has removed Warranty seal.

1. Features

- 4 channels real-time video display and 4 channels real-time video recording
- TRIPLEX – Simultaneous record, playback and network transfer
- Individual channel recording and playback with different frame rate
- High-quality live and playback resolution
- High-quality images with MPEG-2 video compression
- Network features: Remote searching or playback, remote live-monitoring, remote settings change, remote camera control, and remote upgrade
- Network via LAN (DHCP), ADSL (Dynamic and Static IP address)
- 4 channels audio recording
- Various recording triggers: Motion detection, manual recording button, sensor, and schedule
- Search menu geared with graphic user interface, which provides fast, simple, and detailed information
- User-friendly setup menu with graphic user interface
- Easy to schedule a complicated weekly recording plan
- Convenient search menu that displays recording status
- The OSD icons on screen provide various helpful and well-explained information
- Up-to-date motion-detection that offers 4 area-setup for each channel
- USB ports for JPEG data backup and software upgrade using USB flash memory stick
- Still image capture and review as JPEG format
- Internal Pan/Tilt/Zoom/Focus controller
- Easy operating with the buttons on the front and the remote controller
- User verification by password certification
- Video loss detection
- Web-viewer
- CD-RW (Option): Backup, S/W upgrade

2. Name, Function and Connection

2-1. Front View



A. PLAYBACK BUTTONS

REW, REW JUMP/STEP, PLAY/PAUSE, JUMP/STEP, and FF buttons are used for playing recorded videos.

B. POWER

Press this button to power on/off DVR. A red light appears when the power of DVR is turned on.

C. CAPTURE

Press this button to save a captured still-image during playback as a JPEG file.

D. RECORD

Press this button to start/stop manual recording. A red light appears during the recording.

E. REMOVABLE HDD RACK

Removable HDD rack to install default hard disk drive

F. NETWORK LED

A red light appears when the network client is connected to DVR.

G. RECORD LED

A red light appears during DVR is recording.

H. SENSOR LED

A red light appears when sensor perceives event.

I. MOTION LED

A red light appears when DVR detects motion.

J. IR RECEIVER

Remote Controller signal receiver

K. SEARCH

Press this button to begin searching the recorded video.

L. SETUP

Press this button to begin changing DVR setup.

M. LOCK

Press this button to lock/unlock the buttons of DVR.

N. MISC

Press this button once to show or hide the status icons on live screen and playback screen,

Press twice to move to "1.Brightness 2.Contrast 3.AlphaBlending 4.OSD Position" adjustment menu of each channel,

Press triple to move to "1.Pan/Tilt 2.Zoom/Focus 3.Camera Initial" control menu of each channel.

O. AUTO

Press this button to activates/deactivates channel rotating function during full screen display of single channel.

P. QUAD/MUX

To switch the display from 1-channel video to 4-channels video in live display, and vice versa.

Q. DIRECTION / "SEL" BUTTON

These can be used as arrow keys and number key. ▲▼◀▶ buttons are used as 1, 2, 3, and 4, respectively.

◀▶ button: Used to change possible values in Setup menu

▲▼ button: Used to move items in Setup menu

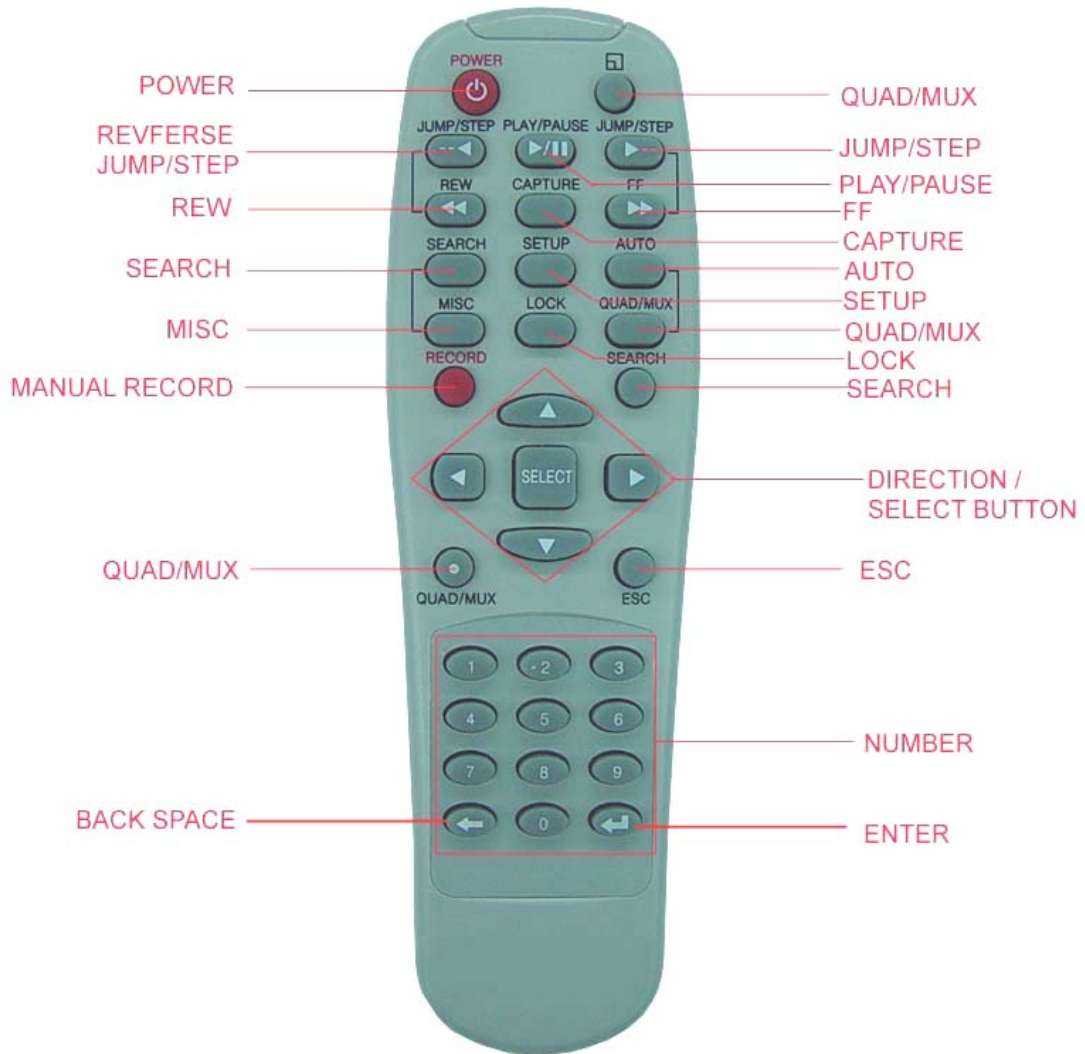
"SEL" button in the middle is used for various purposes.

"SEL" button: Used to enter each sub menu. Also used to select number values.

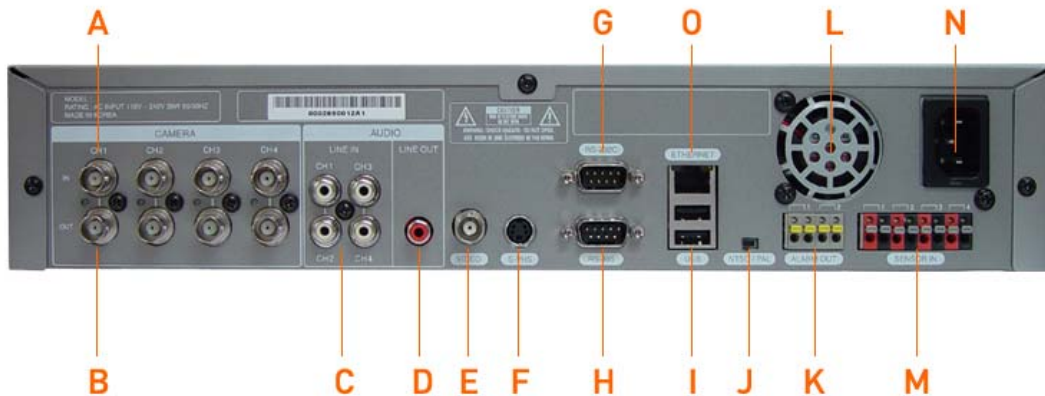
R. ESC

Press this button to go back to the previous menu

2-2. Remote Control



2-3. Rear View



- A. CAMERA INPUT
BNC Input Connectors for camera
- B. LOOPBACK OUTPUT
BNC Loop-back Output Connectors for cameras
- C. AUDIO IN
RCA Audio Input Terminals
- D. AUDIO OUT
RCA Audio Output Terminal
- E. VIDEO OUT
BNC Monitor Out Connector
- F. S-VHS
S-VHS Monitor Out Connector
- G. RS-232C
Connector for DVR Control and Upgrade
- H. RS-485
Camera Control
- I. USB PORT
- J. NTSC/PAL SWITCH
- K. ALARM OUT
- L. POWER FAN
- M. SENSOR IN (**Power input: DC 10~12V**)
- N. POWER IN
- O. 10 BASE T ETHERNET
Connector for Network Connection

2-4. Specification

VIDEO	INPUT	4 composite BNC (NTSC/PAL) – 1.0Vp-p	
	OUTPUT	1 composite BNC (NTSC/PAL) – 1.0Vp-p	
		1 S-VIDEO	
		4 composite loop-back	
AUDIO	INPUT	4 Line In (RCA)	
	OUTPUT	1 Line Out (RCA)	
ALARM	INPUT	4 (Power input: DC 10~12V)	
	OUTPUT	2	
RECORD	COMPRESSION	MPEG-2	
	VIDEO FORMAT	NTSC	PAL
	RESOLUTION	360x240, 720x480	360x288, 720x576
	QUAD MODE	120fps/4CH(360x240/CH)	100fps/4CH(360x288/CH)
	MUX MODE	120fps/4CH(360x240/CH)	100fps/4CH(360x288/CH)
		30fps/4CH(720X480/CH)	25fps/4CH(720X576/CH)
	FRAME SIZE	2~3KB(360x240), 10~16KB(720x480)	2~3KB(360x288), 10~16KB(720x576)
STILL IMAGE CAPTURE	720x480/360X240 (JPEG)	720x576/360X288 (JPEG)	
ARCHIVING	MODE	Manual, Motion, Sensor, Motion & Sensor	
	METHOD	By Resolution, fps & Quality	
	MOTION DETECTION	4 Areas setup per channel	
MULTI TASK	TRIPLEX	Record, playback and transfer	
CONTROL UNIT		IR Type Remote Control and Front key pads	
SERIAL PORT	CONSOLE	1 RS-232C (9pin male DSUB connector)	
	CAMERA CONTROL	1 RS-485 (9pin male DSUB connector)	
NETWORK	TCP/IP (LAN INTERFACE)	1 10-base T Ethernet	
	FUNCTIONS	Live, Search, Setup, Backup, P/T/Z/F	
HDD	AVAILABLE CAPACITY	40, 60, 80, 120, 160, 200, 250GB	
BACKUP	STILL IMAGE BACKUP	2 USB1.1 for USB Flash memory stick	
	VIDEO BACKUP	CD-RW (Option)	
PHYSICAL	DIMENSIONS (W x L x H)	38cm x 30cm x8.5cm	
	NET WEIGHT	5.5Kgs (without HDD)	
	PACKAGE WEIGHT	7.2Kgs (with HDD)	
ELECTRICAL	POWER SOURCE	AC115/230V, 50-60HZ	
	POWER CONSUMPTION	30W (approximately)	

2-5. Packing List

CONTENTS

1. DVR
2. MANUAL
3. POWER CODE
4. REMOVABLE-HDD RACK KEY & SCREW
5. REMOTE CONTROLLER
6. BATTERY
7. CD - CLIENT SOFTWARE

3. Factory Default

- LIVE
 - CHANNEL ROTATION
 - ◆ CHANNELS----- 1 2 3 4
 - ◆ DURATION-----5 SECONDS
 - CHANNEL INFO-----1 2 3 4
 - ◆ LABEL----- CH1
 - STATUS DISPLAY----- SHOW
 - ALPHA BLENDING----- 10%
- RECORD
 - QUAD
 - ◆ GENERAL
 - QUALITY-----HIGH QUALITY
 - SAVE EVENT LOG-----OFF
 - NET FRAME DROP-----ON
 - ◆ CHANNEL
 - FRAME-----AVAILABLE=116
 - RATE-----1 FRAME/SEC
 - RECORDED BY
 - ◇ SENSOR-----OFF
 - ◇ MOTION-----OFF
 - ◇ MANUAL----- OFF
 - ◇ CONTINUOUS-----ON
 - AUDIO-----1 2 3 4
 - ◆ SENSOR
 - SENSOR NUMBER----- 1
 - ◇ TYPE----- NORMAL OPEN
 - ◇ RELAY OUTPUT
 - ALARM----- 1 2
 - CHANNEL----- ON
 - DURATION----- 5 SECONDS
 - ◆ MOTION
 - REGION----- FULL
 - RELAY OUTPUT
 - ◇ ALARM NUMBER----- 1 2

- SENSITIVITY----- L 1 2 3 4 5 6 7 8 9 H
- POST RECORD----- 2 SECONDS

■ MUX

◆ GENERAL

- RESOLUTION -----360 X 240
- QUALITY----- HIGH QUALITY
- SAVE EVENT LOG-----OFF
- NET FRAME DROP-----ON

◆ CHANNEL

- CHANNEL NUMBER -----CH1
 - ◇ FRAME RATE ----- AVAILABLE=116
 - ◇ RATE-----1 FRAME/SEC
 - ◇ RECORDED BY
 - SENSOR----- OFF
 - MOTION----- OFF
 - MANUAL----- OFF
 - CONTINUOUS-----ON
 - ◇ AUDIO----- 1 2 3 4

◆ SENSOR

- SENSOR NUMBER----- 1
 - ◇ TYPE----- NORMAL OPEN
 - ◇ RELAY OUTPUT
 - ALARM----- 1 2
 - CHANNEL----- 1 2 3 4
 - DURATION----- 5 SECONDS

◆ MOTION

- CHANNEL NUMBER -----CH1
 - ◇ REGION----- FULL
 - ◇ RELAY OUTPUT
 - ALARM NUMBER----- 1 2
 - ◇ SENSITIVITY----- L 1 2 3 4 5 6 7 8 9 H
- POST RECORD----- 2 SECONDS

■ SCHEDULE

● SYSTEM

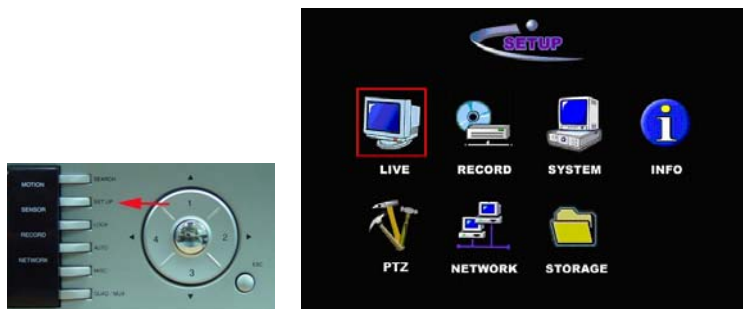
- ADMIN PASSWORD----- SELECT
- USER PASSWORD----- SELECT

- FACTORY DEFAULT----- SELECT
- DATE FORMAT-----YYYY/MM/DD
- CURRENT DATE-----YYYY/MM/DD
- CURRENT TIME----- HH:MM:SS
- GMT AREA----- [GMT+0:00]
- DAYLIGHT SAVING----- OFF
- INFO
 - SITE ID----- DVR
 - LOG----- SELECT
 - SYSTEM -----SELECT
 - CAPTURED IMAGE----- SELECT
 - SEND MAIL -----OFF
- PTZ
 - PTZ CHANNELS ----- 1 2 3 4
 - ◆ CAMERA TYPE -----
 - ◆ CAMERA ID----- 1
- NETWORK
 - CLIENT ACCESS -----ON
 - PORT NUMBER ----- 4456
 - NETWORK TYPE-----LAN
 - ◆ DHCP-----OFF
 - ◆ DDNS-----ON
 - ◆ DDNS SERVER IP----- xxx.xxx.xxx.xxx
 - ◆ IP ADDRESS -----xxx.xxx.xxx.xxx
 - ◆ GATEWAY-----xxx.xxx.xxx.xxx
 - ◆ SUBNET MASK----- xxx.xxx.xxx.xxx
- STORAGE
 - STORAGE OVERWRITE----- ON
 - HDD FORMAT----- MASTER
 - AUTO ERASING (30DAYS) ----- OFF
 - CD-RW BACKUP ----- SELECT (CD-RW version only)
 - S/W UPGRADE W/ CD-RW ----- SELECT (CD-RW version only)

4. Setup

4-1. Initial menu

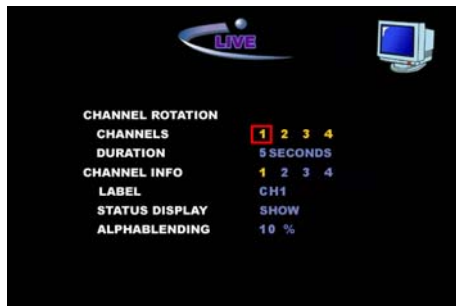
Press the Setup button, then Setup menu will appear.



4-2. LIVE

4-2-1. Channel Rotation

1. Select LIVE and press SEL button to show LIVE setup screen.
2. Select a live display rotation channel among channel 1,2,3,4 with SEL button. (Yellow means that the channel is included in channel rotation during live display. The only yellow colored channels will be appeared in channel rotation during live display. White means that the channel is not included in channel rotation during live display.)

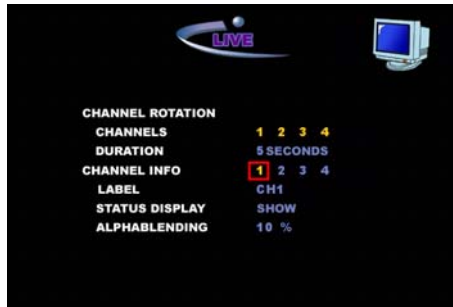


3. Select a channel for channel rotation, move the cursor to "Duration" to set the rotation time of display screen. (Duration time varies 2, 3, 5, 10, 15, 20, & 30 seconds)

4-2-2. Channel Info

4-2-2-1. LABEL

1. Select LIVE and press SEL button to show LIVE setup menu
2. Go to CHANNEL INFO and select the channel you wish to change the channel name of. The name of the chosen channel shows up at LABEL field.



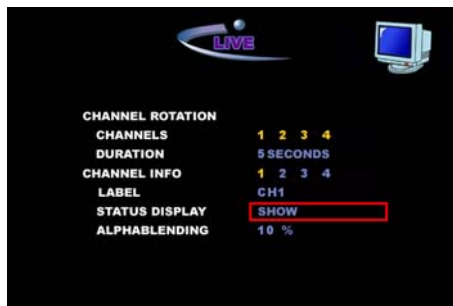
3. Press SEL button when the cursor is LABEL field (channel name). A keyboard will appear for you to type in a new name.



4. Name the label (channel name) by using ▲▼◀▶ buttons and SEL button. Press enter to save. The name is changed in LABEL field.

4-2-2-2. Status Display

1. Select LIVE and press SEL button to show LIVE setup menu
2. Select whether to <Show> or <Hide> the status Information by using ◀▶ buttons.

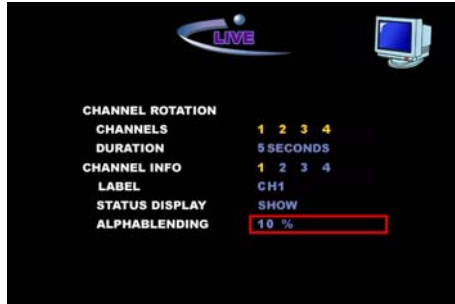


<SHOW> shows the status information on the live screen (channel name, HDD Status, Current Time, LOCK, NETWORK)

<HIDE> hides the status information on the live screen. When <Hide> is checked, press the MISC button to show the status information.

4-2-2-3. ALPHABLENDING

1. Select LIVE and press SEL button to show LIVE setup menu.
2. Adjust Alpha Blending from 0% to 90% by using ◀▶ buttons.

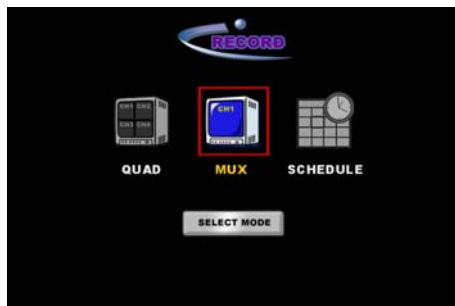


4-3. RECORD

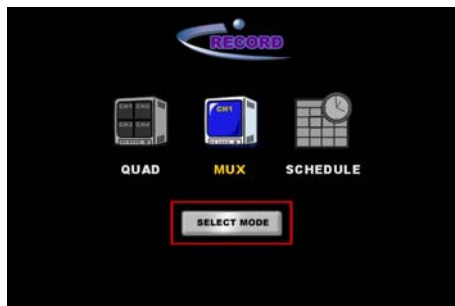
In Record Setup, you can choose from QUAD, MUX, and SCHEDULE recording mode. In each mode, the recording quality, recording frame, audio, sensor, motion detector, and other details can be customized.

4-3-1. Select Recording Mode (QUAD, MUX, SCHEDULE)

1. Select RECORD and press SEL button to go to the recording mode select screen.



2. Move the cursor to SELECT MODE bar and press SEL button.



The current recording mode is highlighted in colors.

3. Use ◀▶ buttons to move the cursor to the desired mode (QUAD, MUX or SCHEDULE) and press SEL button.



4. The selected mode becomes highlighted. Press ESC button to go back to LIVE mode, and from then the selected recording mode will be applied to recording sessions.

4-3-2. QUAD Recording Mode



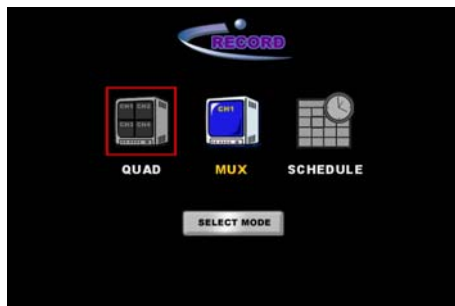
< QUAD - NTSC >



< QUAD - PAL >

<Screen and Resolution Setting in QUAD Mode Recording>

1. Select RECORD and press SEL button to go to Select Mode for recording.



2. Select QUAD on the Select Mode screen to go to QUAD setup screen.



4-3-2-1. GENERAL Setup

In QUAD Setup screen, select GENERAL to go to the GENERAL setup screen.



- QUALITY – Press ◀▶ button to select recording quality.

DVR supports three types of recording quality in QUAD recording mode.
<LOW QUALITY> offers somewhat harsh picture quality and small file size.
<NORMAL QUALITY> offers average picture quality and medium file size.
<HIGH QUALITY> offers fine picture quality but file size is the largest.
The user should choose the appropriate quality level considering his/her purpose.

- SAVE EVEN LOG – Press ◀▶ button to set ON or OFF

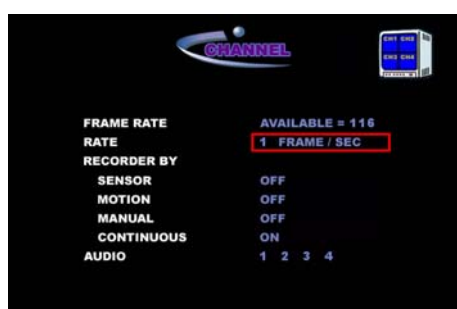
<ON> – LOG will be recorded when events occur.

- NET FRAME DROP - Press ◀▶ button to set ON or OFF

<ON> – When network bandwidth is not sufficient for transmitting all frames, DVR transmits only I frame, dropping B and P frame.

4-3-2-2. CHANNEL Setup

Select CHANNEL in QUAD setup screen to go to CHANNEL setup screen.



- FRAME RATE – It shows the available frame rate.
- RATE – Press ◀▶ button to select the recording speed.

The QUAD recording mode supports
NTSC: 1, 4, 8, 15, 22, and 30FPS
PAL: 1, 4, 7, 13, 18 and 25FPS

- SENSOR – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the sensor is activated.
Please refer to “4-3-2-3. SENSOR Setup”.

- MOTION – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the motion is detected.
Please refer to “4-3-2-4. MOTION Setup”.

- MANUAL - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be recorded when the user press RECORD button.

- CONTINUOUS - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be ALWAYS recorded when DVR is in operation.

- AUDIO – Move the cursor on the one of <1>, <2>, <3>, and <4> and press SEL button to select the audio port that will be recorded. The selected audio channels will be highlighted in Yellow.

4-3-2-3. SENSOR Setup

In QUAD setup screen, select SENSOR to go to SENSOR setup screen.



5 seconds of Pre-Record will be applied to all channels as default.

- SENSOR NUMBER – Press ◀▶ button to select sensor that one want to set and link with the recording channel.
- TYPE - Press ◀▶ button to select the type of sensor to be activated.

Select the right sensor type according to the type of installed sensor with DVR.
NORMAL OPEN – Normal Open type sensor
NORMAL CLOSE – Normal Close type sensor

- ALARM - Press ◀▶ button to select the port on which an alarm out is made

when sensor is activated.

- CHANNEL - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be recorded when the sensor is activated.

- DURATION - Press ◀▶ button to select the duration of alarm output and the recording time of the linked channel.

Available alarm output and channel recording duration – 5, 10, 15, 30, 60, 120, and 180 seconds.

4-3-2-4. MOTION DETECTION Setup

In QUAD setup screen, select MOTION to go to MOTION setup screen.



- REGION – FULL

In QUAD mode, the motion detection is applied to full screen region only.

- ALARM NUMBER - Press ◀▶ buttons to select the port on which an alarm out is made when motion is detected.
- SENSITIVITY – Move the cursor on the field of SENSIVITY “L 1 2 3 4 5 6 7 8 9 H” and select sensitivity using ◀▶ buttons. The selected sensitivity will be highlighted in Yellow color.

SENSITIVITY “1” - Only reacts to big movements (low sensitivity).

SENSITIVITY “5” - Reacts to average movements (medium sensitivity).

SENSITIVITY “9” - Reacts even to small movements (high sensitivity).

- POST RECORD – Using ◀▶ buttons, select the duration of post-recording.

4-3-3. MUX Recording Mode



<RESOLUTION: 360X240>



<RESOLUTION: 720X480>

Difference in recording resolution depending on image resolution setting in MUX mode

1. Select RECORD and press SEL to move to RECORD select mode.



2. Select MUX in RECORD select mode screen to go to MUX setup screen.



4-3-3-1. GENERAL Setup

In MUX setup screen, select GENERAL to move to GENERAL select mode.



- RESOLUTION – Press ◀▶ button to select recording resolution.
- QUALITY – Press ◀▶ button to select recording quality.

DVR supports four types of picture quality in MUX recording mode.
 <LOW QUALITY> offers somewhat harsh picture quality but small file size.
 <MEDIUM QUALITY> offers average picture quality and average file size.
 <HIGH QUALITY> offers fine picture quality and big file size.
 User should choose the appropriate picture quality considering his/her purpose.

- SAVE EVEN LOG – Press ◀▶ button to set ON or OFF

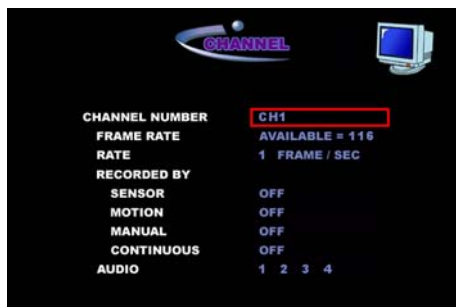
<ON> – LOG will be recorded when events occur.

- NET FRAME DROP - Press ◀▶ button to set ON or OFF

<ON> – When network bandwidth is not sufficient for transmitting all frames, DVR transmits only I frame, dropping B and P frame.

4-3-3-2. CHANNEL Setup

In MUX setup screen, select CHANNEL to go to CHANNEL setup screen.



- CHANNEL NUMBER - Press ◀▶ button to select the channel.
- FRAME RATE – It shows the available frame rate.
- RATE – Press ◀▶ button to select the recording speed of the channel.

The MUX recording mode supports
 NTSC: 360x240 - 1 to 30FPS / 720X480 - 1, 4, 8, 15, 22, and 30FPS
 PAL: 360X288 - 1 to 25FPS / 720X576 - 1, 4, 7, 13, 18 and 25FPS

- SENSOR – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the sensor is activated.
Please refer to “4-3-3-3. SENSOR Setup”.

- MOTION – Press ◀▶ button to set <ON> or <OFF>.

<ON>: Video will be recorded when the motion is detected.
Please refer to “4-3-3-4. MOTION Setup”.

- MANUAL - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be recorded when the user press RECORD button.

- CONTINUOUS - Press ◀▶ button to set <ON> or <OFF>

<ON>: Video will be ALWAYS recorded when DVR is in operation.

- AUDIO – Move the cursor on the one of <1>, <2>, <3>, and <4> audio inputs and press SEL button to select the audio port that will be recorded. The selected audio channels will be highlighted in Yellow.

4-3-3-3. SENSOR Setup

In MUX screen, select SENSOR to go to SENSOR setup screen.



5 seconds of Pre-Record will be applied to all channels as default.

- SENSOR NUMBER – Press ◀▶ button to select sensor that one want to set and link with recording channel.

- TYPE - Press ◀▶ button to select the type of sensor to be activated

Select the right sensor type according to the type of installed sensor with DVR.
NORMAL OPEN – Normal Open type sensor
NORMAL CLOSE – Normal Close type sensor

- ALARM - Press ◀▶ button to select the port on which an alarm out is made

when sensor is activated.

- CHANNEL - Press ◀▶ button to select the channel to record when sensor is activated.
- DURATION - Press ◀▶ button to select the duration of alarm output and the recording time of the linked channel.

Available alarm output and channel recording duration – 5, 10, 15, 30, 60, 120, and 180 seconds

4-3-3-4. MOTION DETECTION Setup

In MUX setup screen, select MOTION to go to MOTION setup screen.



- CHANNEL NUMBER - Press ◀▶ buttons to select the channel to set the motion detection.
- REGION – Press ◀▶ buttons to select the process of the motion detection area setup.

<FULL>: The motion detection is always applied to full screen region.

<INDIVIDUAL>: The user can set 4 motion detection areas per channel. Please refer to “5-11. Motion Detection Region Setup” for individual motion detection area setup.

- ALARM NUMBER - Press ◀▶ buttons to select the port on which an alarm out is made when motion is detected.
- SENSITIVITY – Move the cursor on the field of SENSIVITY “L 1 2 3 4 5 6 7 8 9 H” and select sensitivity using ◀▶ buttons. The selected sensitivity will be highlighted in Yellow color.

SENSITIVITY “1” - Only reacts to big movements (low sensitivity).

SENSITIVITY “5” - Reacts to average movements (medium sensitivity).

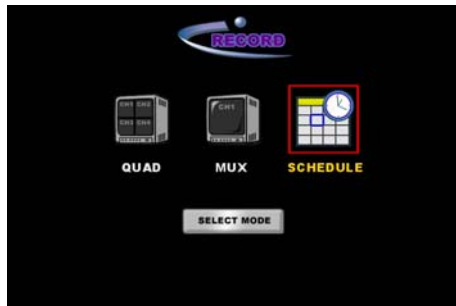
SENSITIVITY “9” - Reacts even to small movements (high sensitivity).

- POST RECORD – Using ◀▶ buttons, select the duration of post-recording.

4-3-4. SCHEDULE Recording Mode

SCHEDULE supports the weekly recording plan. The default recording mode of schedule is MUX recording mode and recording frame rate set in MUX recording mode is applied. (Please refer to “4-3-3-2. CHANNEL setup”)

1. Select RECORD and press SEL to move to RECORD select mode.



2. Select SCHEDULE to go to the screen where recording schedule can be set. The screen will show the plan chart of one day of the week.



4-3-4-1. Applied Function with Respect to the Cursor's Location

- TIME: Applies to the whole region
- CH1: Applies only to the CH1 column
- CH2: Applies only to the CH2 column
- CH3: Applies only to the CH3 column
- CH4: Applies only to the CH4 column
- 1~23: Applies only to the specified time slot
- PREV: Move to the previous day of the week
- NEXT: Move to the next day of the week
- COPY PREV: Copy schedule of current day to the previous day of the week and move to that day.
- COPY NEXT: Copy schedule of current day to the next day of the week and move to that day.

4-3-4-2. Mapping Recording methods and Front Buttons

Front Buttons	Recording Method	Detailed Feature
REW	SENSOR	Record when the sensor is activated
BACK JUMP/STEP	MOTION	Record when motion is detected
PLAY/PAUSE	RECORD	Record continuously
JUMP/STEP	MOTION & SENSOR	Record by sensor and motion detection
FF	NONE	No recording
CAPTURE	QUAD	Record in QUAD mode



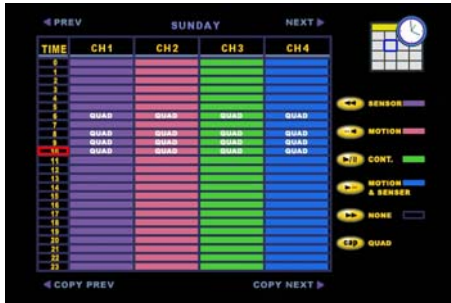
When the recording setups in QUAD and MUX mode differ from what is used in schedule, DVR records by using the method that would record more.

(E.g. If MUX channel 1 is set to record by MOTION and it is to be recorded by SENSOR in SCHEDULE, channel 1 will be recorded by both SENSOR and MOTION.)

4-3-4-3. Schedule setup as QUAD recording mode

To set QUAD recording mode, place the cursor on TIME and 0 to 23 and press CAPTURE button then QUAD passage will appear on each cell.

When Schedule is set as QUAD recording mode, recording frame rate and settings in QUAD setup will be applied. (Please refer to “4-3-2-2. CHANNEL setup”)

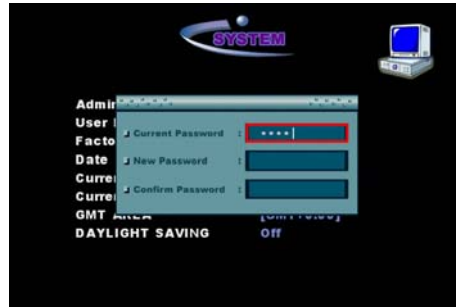


4-4. SYSTEM

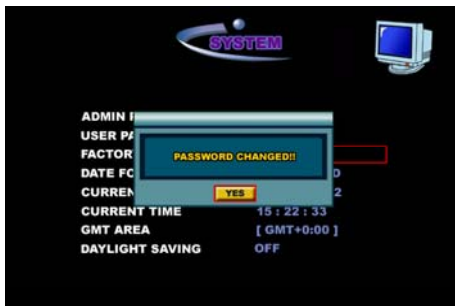
Select SYSTEM and press SEL button to go to SYSTEM setup menu.

4-4-1. ADMIN PASSWORD

ADMIN PASSWORD can be edited here.



1. Place the cursor on “Select” in the field of ADMIN PASSWORD and press SEL button.
2. CURRENT PASSWORD: Enter the current password using 1,2,3, and 4 and press SEL button.
3. NEW PASSWORD: Enter a new password using 1,2,3, and 4 and press SEL button.
4. CONFIRM PASSWORD: Retype the new password and press SEL button to confirm the new password. When “Password Changed” appears as bellow, press “YES” using SEL button to confirm the change.



The factory default password is “1111”.

To delete password, just press SEL button without typing any numbers in the NEW PASSWORD and CONFIRM PASSWORD field.

Applied region and authorization of ADMIN PASSWORD & USER PASSWORD

- ADMIN – All setting changes and other features are accessible
- USER – Making setup changes and turning off the power is disallowed

The user can make Password (ADMIN PASSWORD & USER PASSWORD) ONLY using the numbers of “1”, “2”, “3”, and “4”. The available figures of the password (ADMIN PASSWORD & USER PASSWORD) are 8 figures.

4-4-2. USER PASSWORD

USER PASSWORD can be edited here.



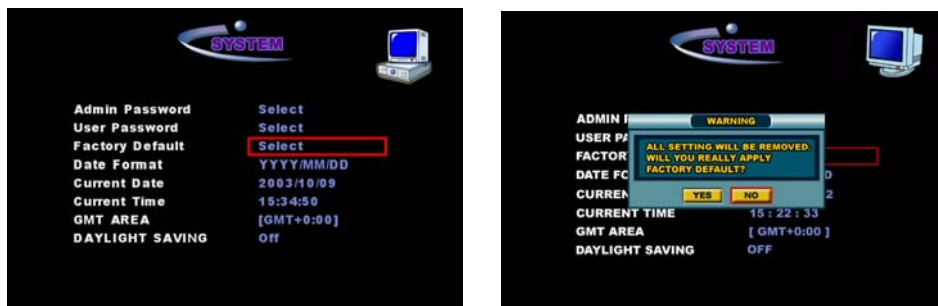
1. Place the cursor on the “Select” and press SEL button.
2. CURRENT PASSWORD: Enter the current password and press SEL button.
3. NEW PASSWORD: Enter a new password and press SEL button.
4. RETYPE PASSWORD: Retype the new password and press SEL button.

The default password is “1111.”

To delete password, just press SELECT without typing any numbers in the NEW PASSWORD and CONFIRM PASSWORD field.

4-4-3. FACTORY DEFAULT

Reset DVR to factory default settings.



1. When the system is reset with factory default settings, all customized settings shall be removed.
2. Users can maintain the user defined and customized settings very easily with network client S/W, please refer to “7-6-5. Saving and loading settings.”

4-4-4. DATE FORMAT

It display format of the date and the user can changed the format of date.

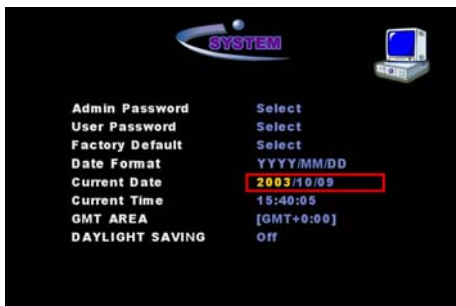


Supported date formats and examples

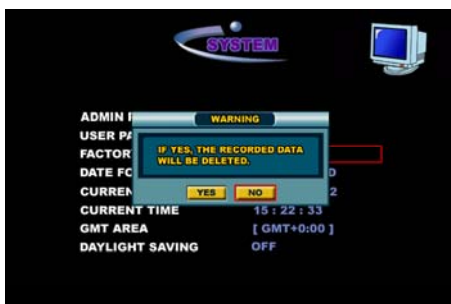
- YYYY-MM-DD → 2003-07-11
- MM-DD-YYYY → 07-11-2003
- DD-MM-YYYY → 11-07-2003
- YYYY/MM/DD → 2003/07/11

4-4-5. CURRENT DATE

It displays current date, which can be edited.



1. Place the cursor on the Current Date field and press SEL button. This will highlight the first part of the date (one of year, month, or day depending on the display format) in yellow.
2. Press ▲▼ buttons to set the date in the shown date format.
3. Press SEL button to apply the changed date.
4. If there are existing data on the date of editing, DVR display "If yes, the recorded data will be deleted." as shown below.



- Press “YES” to delete the related data or press “NO” to keep the data and cancel the date change.

WARNING

If the user selects <YES>, all the data from the changed date will be deleted.

4-4-6. CURRENT TIME

Displays the current time, which can be edited.

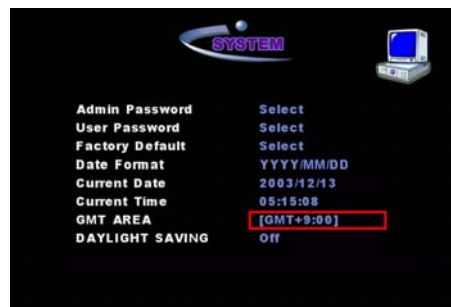
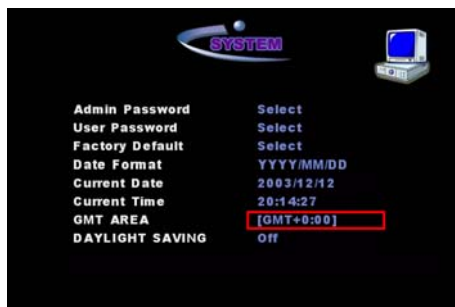


- Place the cursor on the Current Time field and press SEL button. This will highlight the front part of the displayed time yellow.
- Use ▲▼ buttons to set the time in hr/min/sec format.
- Press SEL button to apply the changed time.
- If there are existing data at the time of editing, DVR display “If yes, the recorded data will be deleted.”
- Press “YES” to delete the related data or press “NO” to keep the data and cancel the time change.

WARNING - If the user selects <YES>, all the data from the changed time will be deleted.

4-4-7. GMT AREA

Press ◀▶ buttons to add or lessen to adjust the time of DVR in accordance with GMT time zone of the country or territory. Then the time in the field of CURRENT TIME will be changed.



NOTICE

To apply DAYLIGHT SAVING function properly, GMT AREA setting should be done before DAYLIGHT SAVING setting. Please refer to WORLD TIME ZONE MAP.

4-4-8. DYALIGHT SAVING

1. Press ◀▶ buttons to decide whether to apply DAYLIGHT SAVING or not by selecting <ON> or <OFF>.



2. After selecting <ON>, move the cursor to BEGIN (MM/DD/HH) field and press SEL button. This will highlight the front part of the displayed date in yellow.
3. Use ▲▼ buttons to set the date in MM/DD/HH format.
4. Press SEL button to apply the changed time.



5. When CURRENT DATE and CURRENT TIME is located between BEGIN and END, DLS (DAYLIGHT SAVING) is applied and operated.

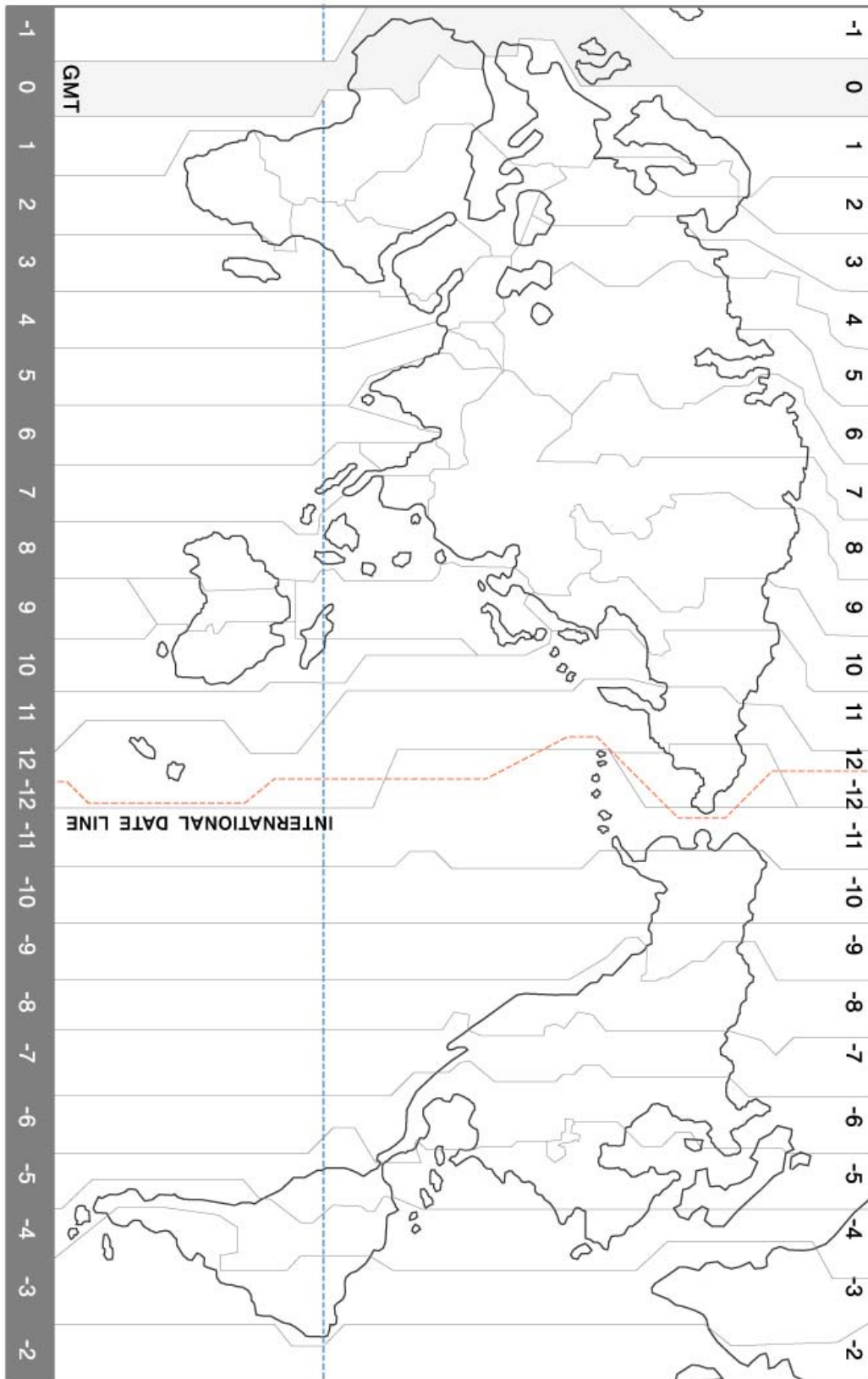


NOTICE

- The Northern Hemisphere: The date and time in BEGIN is earlier than END.
- The Southern Hemisphere: The date and time in END is earlier than BEGIN.

EXCEPTION

- DLS can't start from 23:00.
- DLS can't be applied, if the date of BEGIN and END is same.



4-5. INFO

Select INFO from the SETUP menu and press SEL button to go to INFO setup screen.

4-5-1. SITE ID

Site description of DVR is shown and can be edited here.



Enter in the site description by using ▲▼◀▶ buttons and SEL button and press the ENTER key on the keyboard to save and apply the new description.

4-5-2. LOG

LOG files are shown here.



Place the cursor "Select" LOG field and press SEL button. The window will appear as below.



1. Select date using ▲▼ button and SEL button on the left window. Then the cursor will be shifted to the right window.

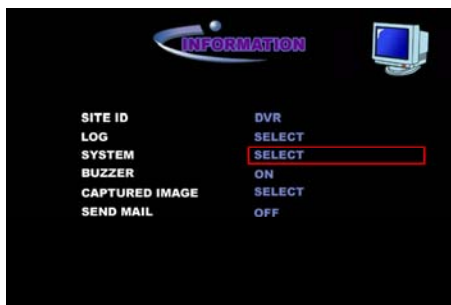


2. Press ▲▼ buttons and SEL button to open the LOG list.



4-5-3. SYSTEM

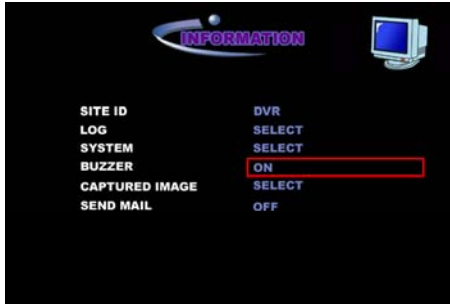
Displays DVR information such as name of tools.



- SYSTEM NAME – It shows the model name of DVR.
- SERIAL ID – It shows the serial ID of DVR.
- SOFTWARE VERSION – It shows the software version of DVR.
- HARDWARE VERSION – It shows the hardware version of DVR.
- CURRENT IP ADDRESS – It shows, if available, the assigned IP address that is in use by DVR.
- HDD CAPACITY – It shows the HDD capacity of DVR.

4-5-4. CAPTURED IMAGE

The images that were captured during playback can be displayed here.



Captured images are sorted by date/time, which indicates the time of recording. Select a file from the list to view the captured image.

To capture a still image and view, please refer to “5-8. Still Image Capturing, Viewing, and Viewing.”

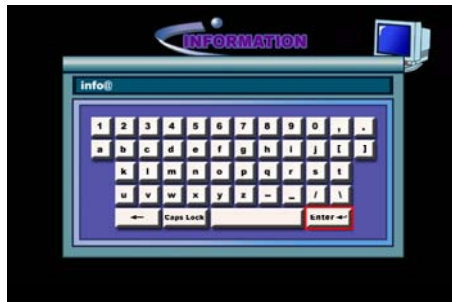
4-5-5. SEND MAIL (IP ADDRESS Mailing)

If the network is linked with LAN-DHCP or ADSL, which support dynamic IP addresses, DVR can send out the dynamic allocated IP addresses by mails. It is unnecessary for a distant user to confirm the IP address when he/she connects to the network since he/she can view it after receiving it by email.

1. Press ◀▶ buttons to decide whether to send mail or not by selecting <ON> or <OFF>.



Move the cursor to MAIL ADRESS field and press SEL button to type in the mail address on the keyboard that appears.



To type @, press “Caps Lock” button. Then @ will appear on the top line.

2. Press ▲▼◀▶ buttons and SEL button to type an email address on the keyboard, and use “ENTER” button on the keyboard to save and apply the changed e-mail address.



3. Move the cursor under Mail Server IP field and press SEL button to select the IP number. Then the first part should turn into yellow color as bellow.



Press ▲▼ buttons to modify the IP address. The other parts of the IP address can be modified as same as the first part.

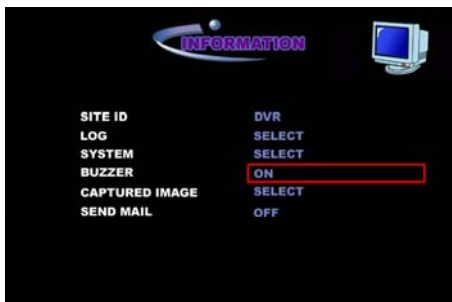
4. Press SEL button to apply the modified IP Address.

IMPORTANT

To receive e-mail with Dynamic IP address from DVR, User has to apply IP address of Mail Server run by Manufacturer on the field of “MAIL SERVER IP”.

4-5-6. BUZZER

User can turn ON or OFF the sound of inter buzzer.



4-6. PTZ

In order to use the PTZF function, the same camera type as the PTZF camera that is connected to the chosen channel should be selected as follows.

1. Select DEVICE and press SEL button to show DEVICE setup menu.
2. On the field of <PTZ Channel>, select the channel on which you wish to change the PTZF type of the camera. The field of <Camera Type> will show the camera type that is currently selected for that channel.



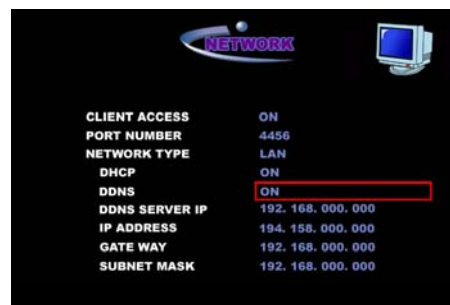
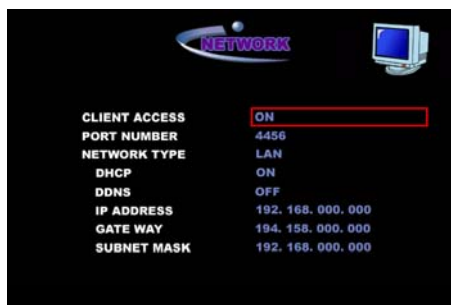
3. After selecting the channel, move the cursor to the field of <Camera Type> using ▲▼ buttons. Select the camera type, using ◀▶ buttons.
4. If the camera has a specific camera ID, move the cursor on the field of <Camera ID> and select the camera ID using ◀▶ buttons.

4-7. NETWORK

Select NETWORK from the SETUP menu and press SEL button to go to NETWORK setup screen.

4-7-1. CLIENT ACCESS

The access from NETWORK CLIENT S/W can be turned off.



<OFF> - The access between NETWORK CLIENT S/W and the system will be blocked up.

4-7-2. LAN

Users connected to LAN network, which uses static IP addresses, should follow the setup described below.

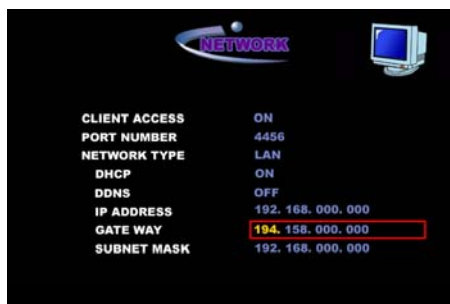
1. Press ◀▶ buttons to set network type to <LAN>.
2. Press ◀▶ buttons to set DHCP to <OFF>.
3. Press ◀▶ buttons to set DDNS to <ON>.
4. Use ▲▼◀▶ buttons to edit DDNS SERVER IP Address. And press SEL button to apply the changed DDNS SERVER IP address.



NOTE

To use DDNS function, the DVR Serial number and Domain Name should be registered at DDNS Server.

5. Place the cursor on the IP Address field and press SEL button. This will highlight the first part of IP address in yellow color.



6. Use ▲▼◀▶ buttons to edit the IP Address. And press SEL button to apply the changed IP address.
7. Edit GATAWAY and SUBNET MASK using the same method as above.

4-7-3. LAN –DHCP (Dynamic Host Configuration Protocol)

Users connected to LAN – DHCP network, which uses dynamic IP addresses, should follow the setup described below.

1. Press ◀▶ buttons to set network type to <LAN>.
2. Press ◀▶ buttons to set DHCP to <ON>.
3. Press ◀▶ buttons to set DDNS to <ON>.
4. Use ▲▼◀▶ buttons to edit DDNS SERVER IP Address. And press SEL button to apply the changed DDNS SERVER IP address.

NOTE

To use DDNS function, the DVR Serial number and Domain Name should be registered at DDNS Server.

5. When DVR is rebooted, the newly assigned IP address appears in the CURRENT IP ADDRESS field.

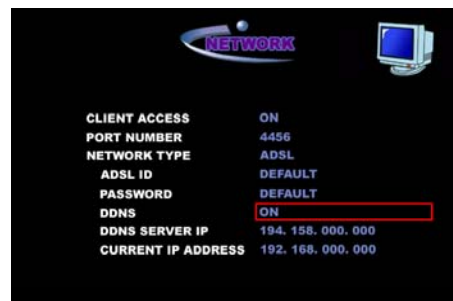
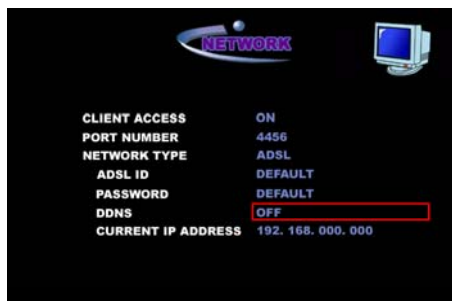


For setting a mail address that will receive the assigned IP addresses that are frequently changed, please refer to “4-5-5. SEND MAIL (IP ADDRESS Mailing).”

4-7-4. ADSL

Users connected to ADSL network, which uses dynamic IP addresses, should follow the setup description below.

1. Press ◀▶ buttons to set network type to <ADSL>.



2. Place the cursor on “default” in the SERVICE ID field and press SEL button to type the ADSL service ID. Then the keyboard will appear.



3. Press ▲▼◀▶ buttons and SEL button to type the ADSL service ID on the keyboard, and use “ENTER” button on the keyboard to save and apply the saved ID.
4. Edit PASSWORD using the same method as editing SERVICE ID.
8. Press ◀▶ buttons to set DDNS to <ON>.
5. Use ▲▼◀▶ buttons to edit DDNS SERVER IP Address. And press SEL button to apply the changed DDNS SERVER IP address.
6. The assigned IP address appears in the CURENT IP ADDRESS field.

For setting a mail address that will receive the assigned IP addresses that are frequently changed, please refer to “4-5-5. SEND MAIL (IP ADDRESS Mailing).”

4-8. STORAGE

Select STORAGE and press SEL button to go to STORAGE setup screen.



4-8-1. STORAGE OVERWRITE

Set up storage overwriting of the hard disk.

<ON>: The oldest data will be deleted and replaced with new data if the hard disk has fully been recorded.

4-8-2. HDD FORMAT

You can format the hard disk by deleting all stored data.

1. Place the cursor on “SELECT” and press SEL button. DVR will show “**All data will be deleted from HDD.**” to confirm the procedure.



2. If you select "YES," DVR will reconfirm the formatting procedure, showing "**Do you really want to delete all data?**"



3. Formatting will proceed when you select "YES". If you select "NO", the hard disk formatting will not proceed and all saved data will be maintained.

WARNING

Formatting the hard disk by deleting all saved data will delete the captured images as well. If you wish to preserve the captured images, please save those images by network client S/W before proceeding of HDD formatting.

4-8-3. AUTO ERASING (30DAYS)

<ON>: The data prior 30days from the temporary date will be automatically deleted.

4-8-4. CD-RW BACKUP (Available only in model with CD-RW)

This menu is to be enabled only when DVR has CD-RW.

Please refer to "5-15. Video back up in CD".

4-8-5. S/W UPGRADE W/ CD-RW (Available only in model with CD-RW)

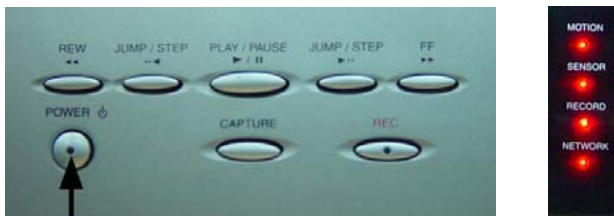
This menu is to be enabled only when DVR has CD-RW. The upgrade guide will be provided by another material.

5. OPERATIONS

5-1. Power ON/OFF

5-1-1. Power ON

- A. Connect the camera input cables to the camera input port on the back of DVR.
- B. Connect the monitor cable to the video output port on the back of DVR.
- C. Connect the power cable to the power input port on the back of DVR.
- D. Press the POWER button only after DVR and other equipments have been fully connected. The LED on the POWER button and SENSOR, MOTION, RECORD, and NETWORK LED on the front right view will light up when DVR starts up.



- E. The graphic image (with logo or without logo) will appear while DVR is being booted.
- F. After the logo disappears, a divided screen shows up on the monitor.
- G. The LOCK function is automatically activated when DVR is initially started up. To use the 'LIVE screen viewing' and other functions, press the LOCK button and enter in the password. (The factory default password is '1111'.)
- H. The LED on the POWER button stays lit up while DVR is being operated.

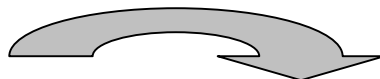
5-1-2. Power OFF

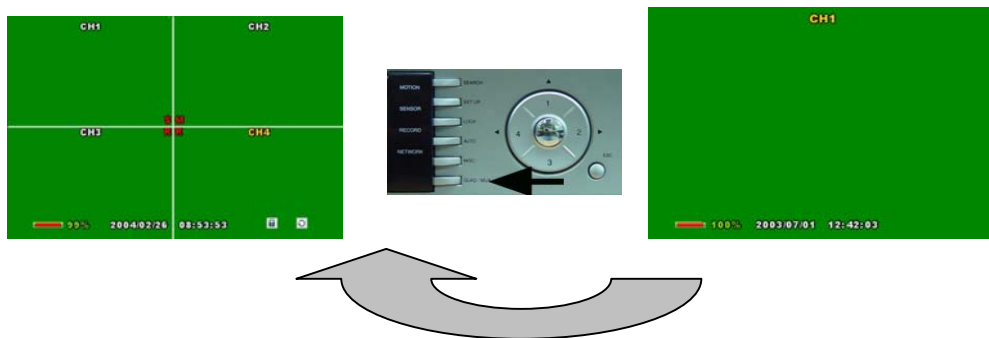
- A. DVR cannot be turned off using the POWER button when the LOCK function is on. Deactivate the LOCK function by pressing LOCK and entering the password.
- B. Turn off DVR by pressing the POWER button on the front view of DVR.
- C. When DVR is being turned off, the LED on the POWER button and SENSOR, MOTION, RECORD, and NETWORK LED on the front right view stay on for a while.
- D. The LED is no longer lit when DVR is turned off.

5-2. LIVE Display

5-2-1. QUAD Screen Setup

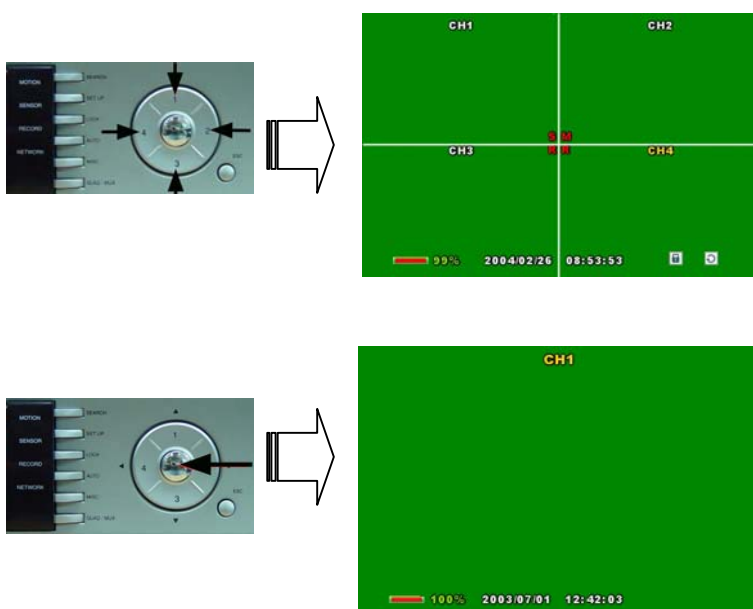
You can switch from Quarterly Divided Screen Setup from Full Screen mode and vice versa by pressing QUAD/MUX button.





5-2-2. Individual Full Screen Setup

Press the channel buttons on DVR to select a channel. The selected channel is highlighted as yellow. Press SEL button to display the channel in full screen.



5-2-3. Auto Channel Rotation




This function is useful when viewing each of the channels in full screen one by one. To set time interval and channels to rotate, please refer to “4-2 LIVE Setup/ A. Channel Rotation”

5-3. OSD ICON

5-3-1. OSD ICON on LIVE Screen

OSD Icon shows the operation status of DVR on the LIVE screen.



- (1) Channel Name
- (2) It shows the recording trigger.
 - ◆ R – When recording is triggered by Manual record button.
 - ◆ M – When recording is triggered by Motion detection.
 - ◆ S – When recording is triggered by Sensor.
- (3) Remaining space in Hard Disk
- (4) Date
- (5) Time
- (6) LOCK, AUTO, NETWORK Status
 - ◆  – When NETWORK CLIENT is connected.
 - ◆  - DVR is locked by a password.
 - ◆  – Auto Channel Rotation is turned on

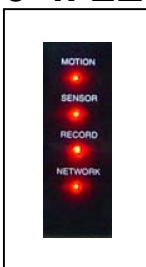
5-3-2. Show/Hide OSD ICON on LIVE Screen

You can hide OSD Icon by pressing MISC button. Press MISC button again and press ESC button to show OSD Icon.



Please refer to “4-2. LIVE Setup / B. STATUS INFO”.

5-4. LED Information



- A. MOTION – LED lights up when motion is detected.
- B. SENSOR – LED lights up when sensor is activated.
- C. RECORD – LED lights up when recording is in progress
- D. NETWORK – LED lights up when Network client is connected.

5-5. Recording

5-5-1. MANUAL Recording

In Manual Recording, manually press the buttons on DVR to record. This method is useful when recording is necessary while monitoring live channels. The recordable channels are limited to the channels that its Record By Manual function is turned on. This is explained under “4-3-2-2. CHANNEL Setup (QUAD) / 4-3-3-2. CHANNEL Setup (MUX)”. When the RECORD button is pressed, the LED on the RECORD button, the RECORD LED, and “R” icon on the screen lights up and starts recording. Press the RECORD button again to stop recording.

5-5-2. SCHEDULE Recording

In Scheduled Recording, DVR automatically records at the specified time. Please refer to “4-3-3. SCHEDULE Record Mode” for Scheduled Recording Setup.

5-5-3. SENSOR Recording

When SENSOR is operated, SENSOR LED, RECORD LED and “S” on the screen light up and the channel that is connected to the Sensor starts to record. Please refer to “4-3-2-3. SENSOR Setup (QUAD)” / “4-3-3-3. SENSOR Setup (MUX)”.

5-5-4. MOTION Recording

When motion is detected, MOTION LED lights up, RECORD LED and “M” on the screen light up and the channel that is connected to the motion is recorded. Please refer to “4-3-2-4. MOTION Setup (QUAD)” / “4-3-3-4 MOTION Setup (MUX)”

5-5-5. CONTINOUS Recording

DVR is always recording, when DVR is running. Please refer to “4-3-2-2. CHANNEL Setup (QUAD)” / “4-3-3-2. CHANNEL Setup (MUX)”.

5-6. PLAYBACK

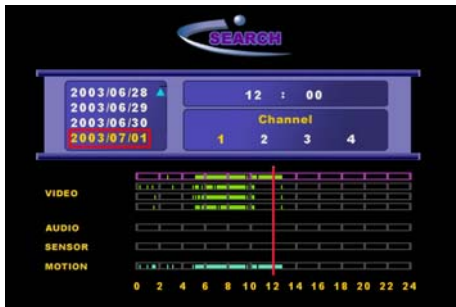
5-6-1. Search when DVR has one HDD

- A. Press the SEARCH button to go to the Search Menu.

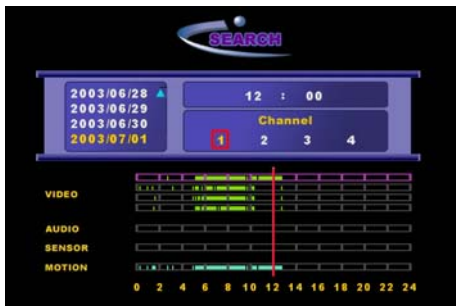


- B. Select the date firstly with ▲▼ buttons. Press SEL button to move to select channel.

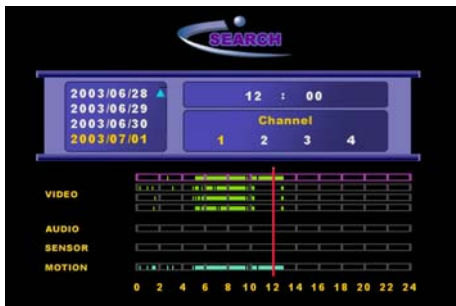
The selected date is highlighted yellow.



- C. Select a desired channel with ◀ ▶ buttons. Selected channel is highlighted yellow. Press SEL button to set the time. Refer to Audio Recording and SENSOR & MOTION related recording information.



- D. Move the TIME BAR (Red Vertical Bar) to select time at the bottom of the Recording Information Columns. Move the time bar using ◀ ▶ buttons. The time bar moves by 7, 15, 22, 30, 37, 45, 52, 00 minutes. The selected time is shown up on the upper part of the Select Channel field.



- E. To change the date again, move to Date by pressing SEL button.
F. After completing time selection, move to the playback screen by pressing the PLAY/PAUSE button.

<Displayed types depending on different recording modes during play>

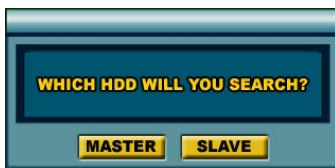
- QUAD – 4 channels are displayed at once
- MUX (Resolution: 360 X 240) – The selected channel is displayed. The channel is played in full screen mode. Press SEL button to playback with the original recording resolution during playback.
- MUX (Resolution: 720 X 480) – The selected channel is displayed.

<SHOW/HIDE OSD ICON during play>

During playback, press the MISC button to hide the OSD ICON (date, channel name, time, playing speed, time bar).

5-6-2. Search when DVR has two HDD

- A. At first you need to set removable HDD as SLAVE and fixed HDD as master. The installation guide will be provided by another material.
- B. Press the SEARCH button to go to the Search Menu. Then the window for HDD selection will be appeared.



- C. Select HDD that you want to search and playback. And then the next steps are the same as "5-6-1. Search when DVR has one HDD".

5-6-3. Playback buttons



- A. PLAY/PAUSE
Press the button to play channels in normal speed (X1).
Press it again to pause.
- B. FF
Press the button to play channels faster than the normal speed (X1)
The fast-forwarding speed is shown up on the upper right corner of the display screen.
 - i. X2 – twice as fast
 - ii. X4 – 4 times as fast
 - iii. X16 – 16 times as fast
- C. JUMP/STEP
When playback is paused, press the button to step forward to the next frame.
During play or fast-forward, it jumps 2 minutes forward from the current spot.
- D. REW
Press the button to reverse play channel faster than the normal speed (- X1).
The speed is shown up on the upper right corner of the display screen.
 - i. - X2 – twice as fast
 - ii. - X4 – 4 times as fast

iii. - X16 – 16 times as fast

E. JUMP/STEP

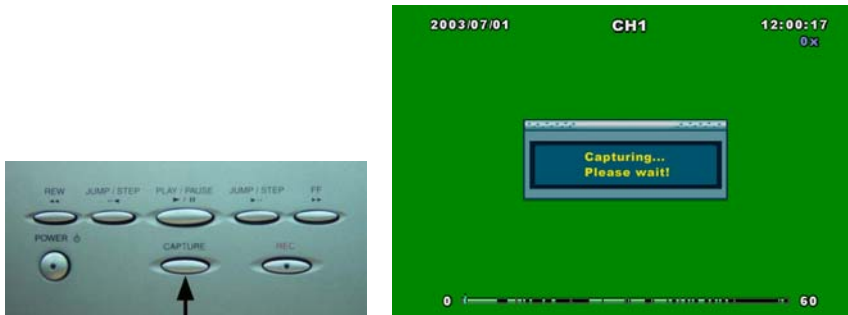
When playback is paused, press the button to step backward to the previous frame.

During play or fast-forward, it jumps 2 minutes backward from the current spot.

5-7. Still Image Capturing, Viewing, and Backup

5-7-1. Capturing Still Image

During playback, press the Pause PLAY/PAUSE button to pause playing screen at desired spot and press the CAPTURE button. It saves 3 consecutive frames as one file.



You must press the Play/Pause button to pause the screen, then press the Capture button in order to capture images.

5-7-2. Viewing Captured Image

Select a list to play the images. Saved frames can be viewed in order by pressing SEL button. The image that is saved in 360X240 is played in 360X240 in the middle of the monitor screen. The image that is saved in 720X480 is played in 720X480 in full of the monitor screen.





5-7-3. Still image Backup in USB flash memory stick

1. Connect an USB flash memory stick into USB port.
2. Select the still image that you want to backup in an USB flash memory stick. Please refer to “5-8-2. Viewing Captured Image”.
3. Press SEL button. Then the still image will be stored in an USB flash memory stick.

NOTICE

Please contact to the supplier or installer of DVR in order to confirm the compatible models of USB flash memory stick.

5-8. PTZF

5-8-1. PTZF Operation

To control the PTZF functions of the camera, connect the controller to the RS-485 port.

For speed dome cameras that supports RS-485, connect them directly to the RS-485 port. But if the camera is controlled with RS-232C, one needs to use Signal Converter (RS-485 to RS-232C).

1. In PTZ from the SETUP menu, set the protocol type of the camera for the channel you wish to control to be the same as the camera that is installed. If the camera has a specific camera ID, move the cursor on the field of <Camera ID> and select the camera ID using ◀▶ buttons.



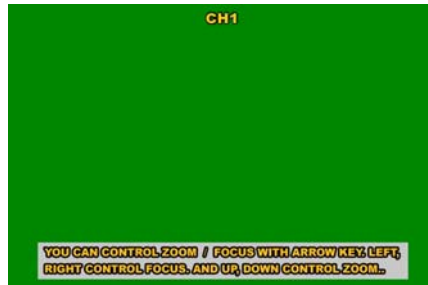
2. Press the MISC button **in triple** to go to the screen where PTZF can be adjusted.



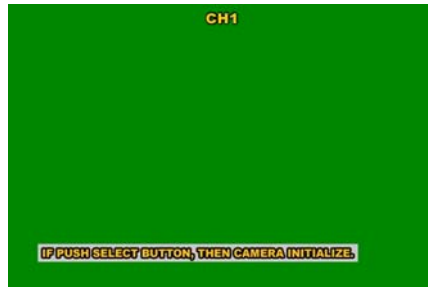
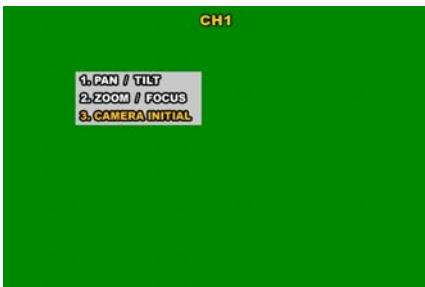
3. PAN/TILT – to pan or tilt the selected channel



4. ZOOM/FOCUS – to zoom or focus the selected channel

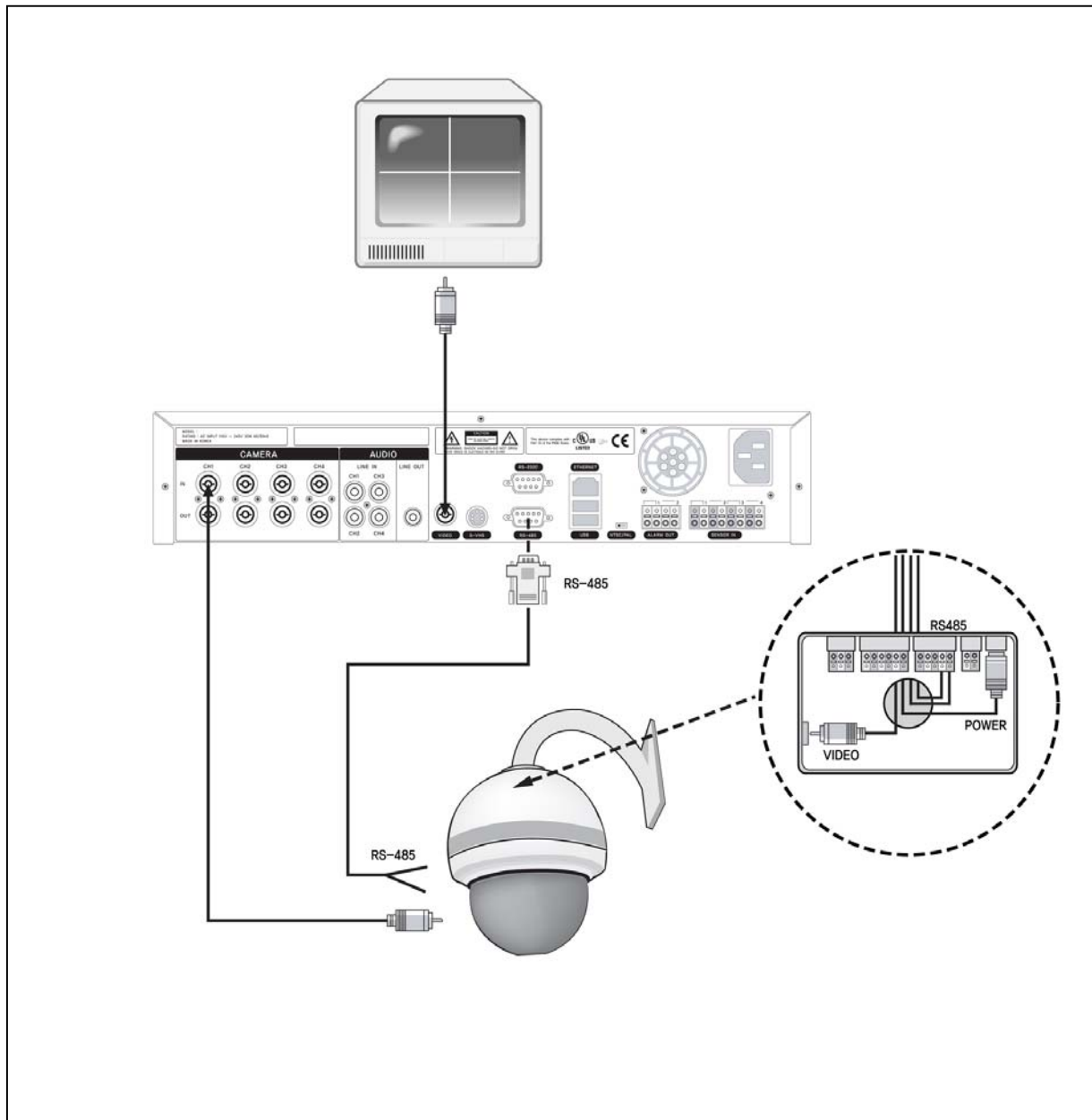


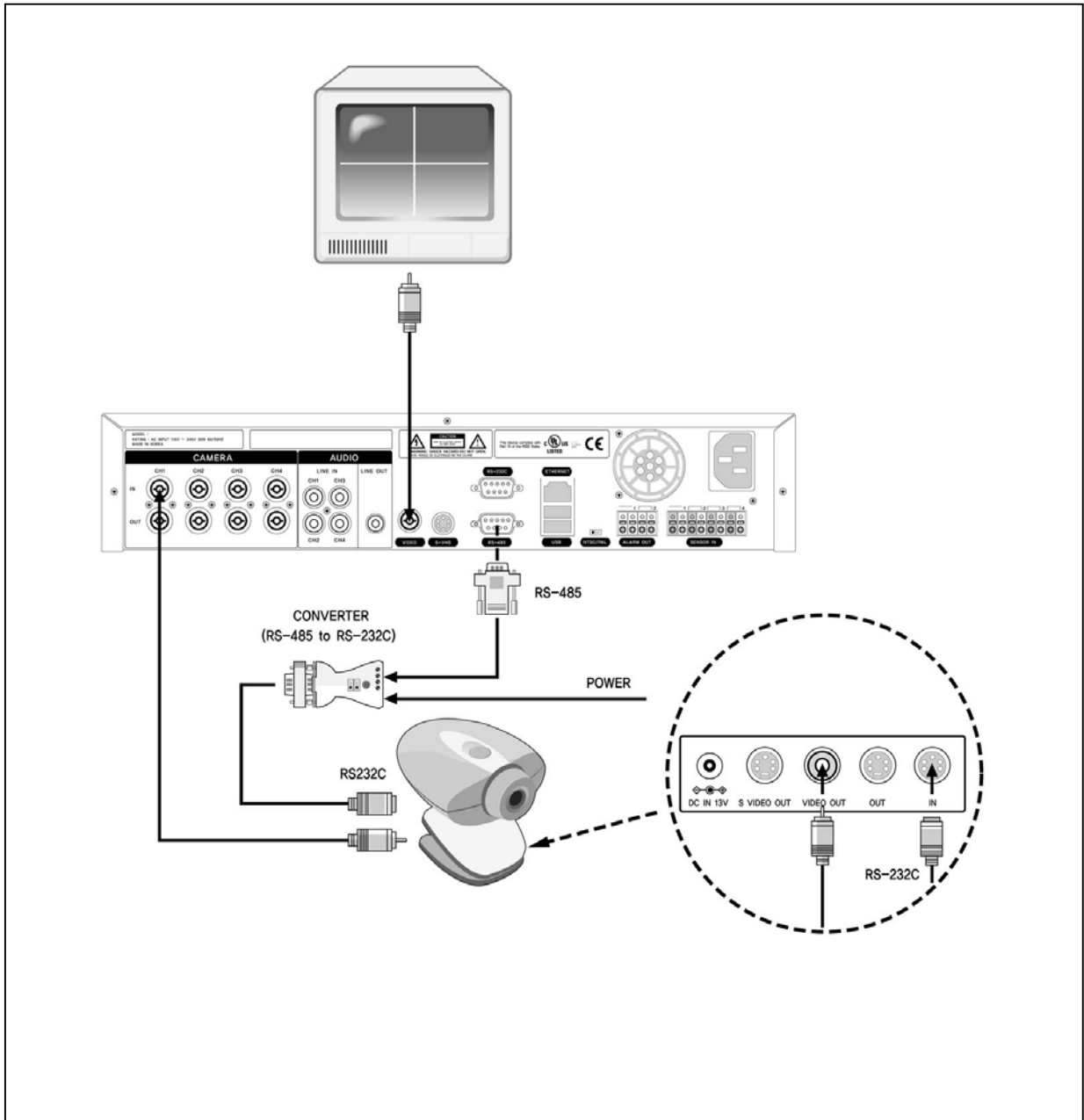
5. CAMERA INITIAL – to go to CAMERA INITIAL settings for the selected channel



This menu is to initialize the PTZ setting of the camera.
 Although the camera is initialized, no message will be appeared.

5-8-2. PTZF Camera link to RS-485





5-9. Brightness, Contrast, Hue, Saturation & Alpha-blending Adjustment

Press the MISC button twice to go to the screen where brightness, contrast and alpha-blending can be adjusted.

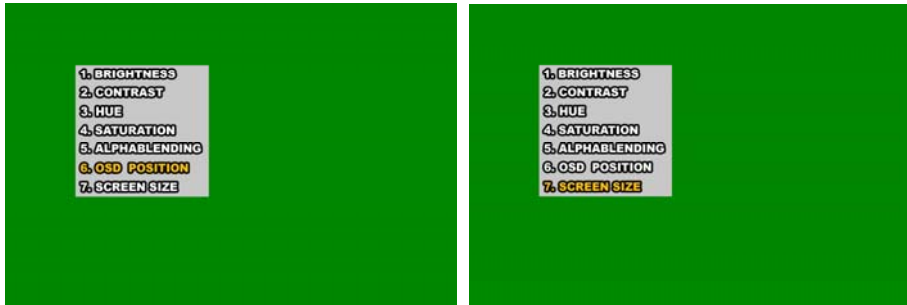


1. BRIGHTNESS – to adjust the BRIGHTNESS of the selected channel using ◀▶ buttons.
2. CONTRAST – to adjust the CONTRAST level of the selected channel using ◀▶ buttons.
3. HUE – to adjust the CONTRAST level of the selected channel using ◀▶ buttons.
4. SATURATION – to adjust the CONTRAST level of the selected channel using ◀▶ buttons.
5. ALPHABLENDING – to adjust the ALPHABLENDING of the selected channel's status icon using ◀▶ buttons.

5-10. OSD position and Screen size Adjustment

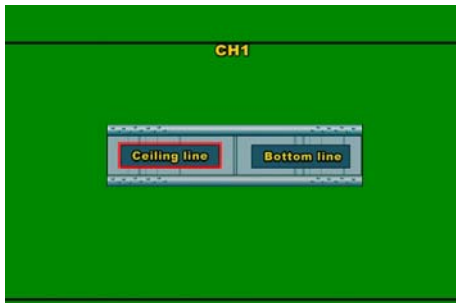
The position of OSD on LIVE screen can be adjusted up and down.

Depending on the characteristics of the monitor, being able to adjust the position of OSD and Screen Size may be a very useful feature.



5-10-1. Adjusting OSD Ceiling & Bottom Line

Place the cursor on CEILING/BOPTTOM LINE and then use ▲▼ and SEL button, and the dark horizontal line across the top/bottom of the screen to adjust the OSD position.



5-10-2. Adjusting Screen size

If your monitor does not display verges of screen, you can make the screen size shrunk.

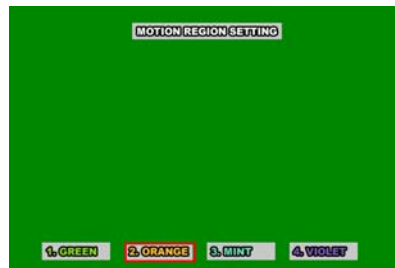
Select SCREEN SIZE menu and then set screen size with SEL button.

5-11. Motion Detection Region Setup

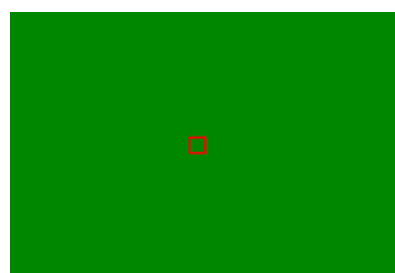
MUX recording mode not only allows full screen motion detection but also lets you assign 4 motion detection regions per channel.

5-11-1. Region Setup

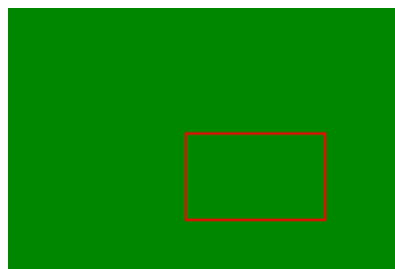
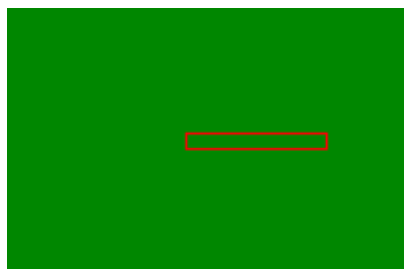
1. Select INDIVIDUAL on REGION field in the MOTION menu and press SEL button to go to Motion Region Setting screen.



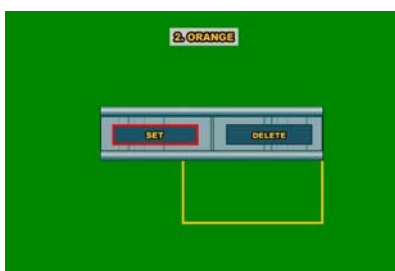
- From 1. GREEN 2. ORANGE 3. MINT 4. VIOLET, select the region you wish to adjust. Place the cursor on "1.Set" and press SEL button to obtain a box that lets you select a region.



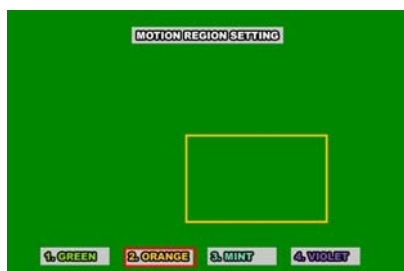
- Move the cursor using ◀▶▲▼ buttons to select the desired region.



- After selecting a region, press SEL button and save the region data.



- Press the ESC button to go back to Motion Region Setting screen.

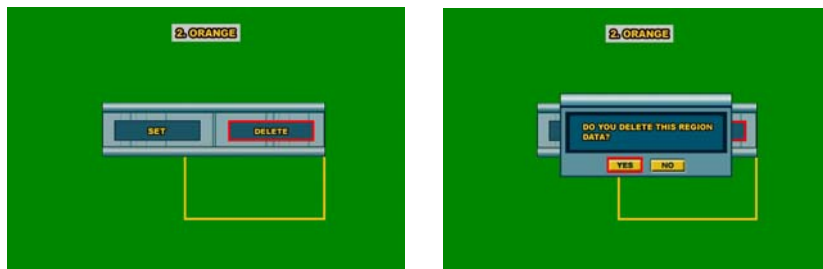


5-11-2. Deleting Region

1. Select INDIVIDUAL for REGION in the MOTION menu and press SELECT button to go to Motion Region Setting screen.



2. From 1. GREEN 2. ORANGE 3. MINT 4. VIOLET, select the region you wish to delete. Place the cursor on "2.DELETE" and press SEL button. When DVR asks "Do you Delete This Region Data?" select "YES" to delete the selected region. A mode for setting a new region will proceed.



5-12. Audio

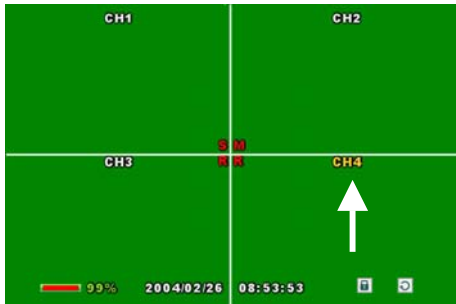
5-12-1. Audio Setup and Connection

1. Connect the audio input and audio output cable to the audio connection port on the back of DVR.
2. In CHANNEL menu of MUX menu, select the desired audio input channel for each video channel by highlighting it yellow.



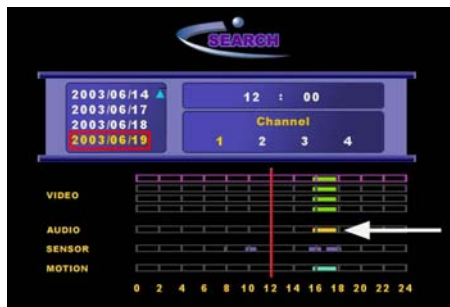
3. When recording by sensor, motion detection, manual or schedule begins, on a channel that the audio is linked to, audio recording begins automatically.

- In MUX recording mode, if you wish to listen to the audio of a channel live, select the channel from live screen using the number buttons. (The channel label becomes highlighted yellow as bellow). Audio live is not available for listening when the SETUP menu is being set up.



5-12-2. Playback

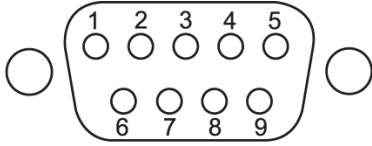
- Connect the audio cable to the audio output port on the back of DVR.
- Check the status part where audio is recorded (highlighted in yellow) from the SEARCH menu. (Audio field will be highlighted in yellow even when only one channel is recorded.)



- Use ◀▶▲▼ buttons and SEL button to select the date, channel and time you wish to play. Press the PLAY/PAUSE button to play the audio with video.

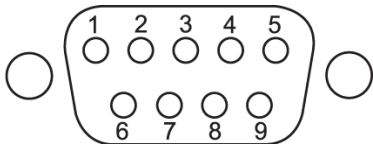
5-13. External Terminal Information

5-13-1. RS-232C



No	Name	Description	No	Name	Description
1	DCD	Data Carrier Detect	6	DSR	Data Set Ready
2	RxD	Receive Data	7	RTS	Request to Send
3	TxD	Transmit Data	8	CTS	Clear to Send
4	DTR	Data Terminal Ready	9	RI	Ring Indicator
5	GND	Signal Ground			

5-13-2. RS-422/485



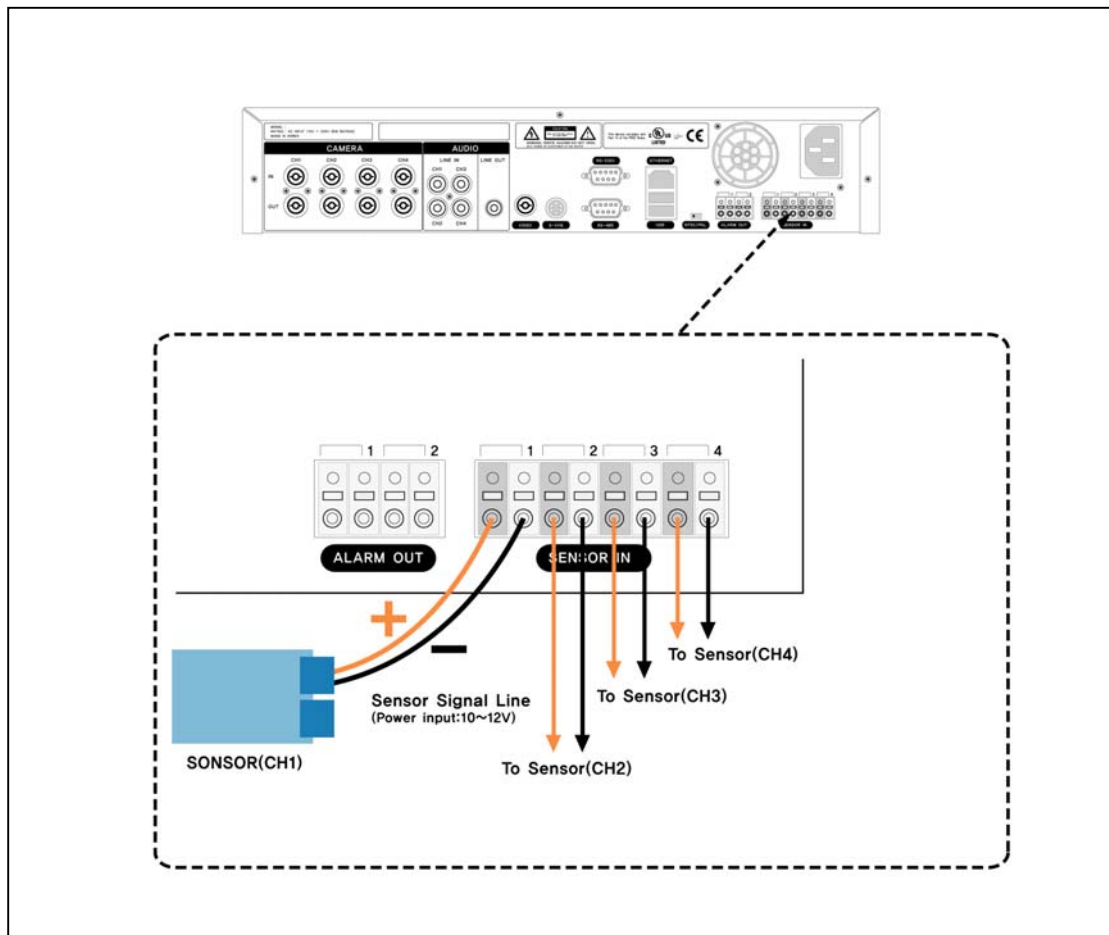
No	Name	Description (RS-422)
1	NC	Not Connected.
2	RxD+	Receive Data+
3	TxD+	Transmit Data+
4	TxD-	Transmit Data-
5	GND	Signal Ground
6	RxD-	Receive Data-
7	NC	Not Connected.
8	NC	Not Connected.
9	NC	Not Connected.

No	Name	Description (RS-485)
1	NC	Not Connected.
2	NC	Not Connected.
3	TxD+	Transmit Data+
4	TxD-	Transmit Data-
5	GND	Signal Ground
6	NC	Not Connected.
7	NC	Not Connected.
8	NC	Not Connected.
9	NC	Not Connected.

5-14. Sensor Installation

DVR can connect up to 4 sensors. There are two simple steps to install the sensors.

- Connect THE SENSOR SIGNAL LINE
- Connect the sensor power line (10~12V)



Warning

Vice versa connection of Positive and Negative will occur a fatal error or a malfunction of DVR.

5-15. Video back up in CD (Available only in model with CD-RW)

5-15-1. Back up in CD

1. Please go to "STORAGE" in the SETUP menu.
2. And then go to CD-RW BACKUP and place the cursor "SELECT" and press SEL button.
The window for CD back up will appear as bellow. Please set the channels and time to backup.



3. If the recorded data on DVR is QUAD mode, you need to select Q on VIDEO. If you do not select Q, QUAD mode will not be backed up on the CD.
4. If the selected data volume exceeds CD media size, you need to put another CD in. And then DVR automatically proceeds backing up from the end of the data of the previous CD.
5. BACKUP is completed, the following message will appear.




6. BACKUP is failed, the following message will appear.

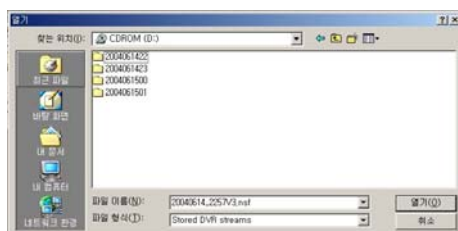


Warning

When user proceeds CD-RW BACKUP, all the other functions such as networking and recording will be on hold.

5-15-2. Playback Data in CD

1. Please put CD in CD-RW in PC.
2. Please start Network Client S/W. 
3. Please go to SEARCH and select PLAYBACK VIDEO button.  And then Search window will pop-up.



4. Please select and open the backed up data.

The file format of the backed up data is *.nsf. You can review and playback the backed up data on CD only in Network Client S/W.

6. HDD Installation

6-1. Installing HDD in removable HDD rack

For DVR, the hard disk, on which images are saved, is installed into the RACK.

The hard disk is installed into DVR as shown in the following instructions.

1. Prepare a hard disk and rack as shown below.



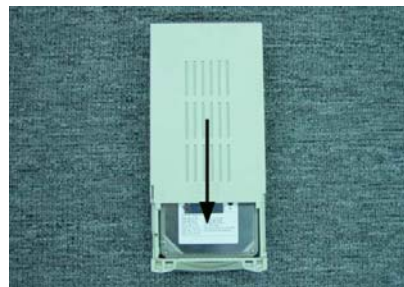
2. Set the hard disk to master. (Refer to the JUMPER SETTING of the hard disk being installed)



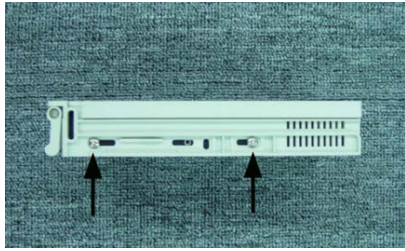
3. Open the upper cover of the rack and connect the power cable and data cable of the hard disk and the rack.



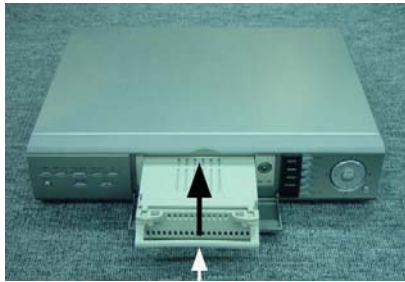
4. Put the cover back on as shown.



5. Tighten the clamping screws on both sides of the rack.



6. Assemble the rack containing the hard disk into DVR while holding up the handle.



7. Have the rack fixed in using the key of the rack. Otherwise, "HDD INSTALLATION FAILURE" message will pop-up.



8. If the hard disk is not formatted and recognizable by DVR, an automatic formatting will be done when the power of DVR is turned on. The notice "FORMATING" will appear on the screen as shown below during formatting.

6-2. HDD Jumper Setting

DVR allows on one hard disk to be assembled into the REMOVEBLE HDD RACK and a new hard disk's JUMPER SETTING should be set to either SINGLE or MASTER. All hard disks provide information needed for JUMPER SETTING on the hard disks' exterior. Please beware that DVR will not run properly without a proper JUMPER SETTING.

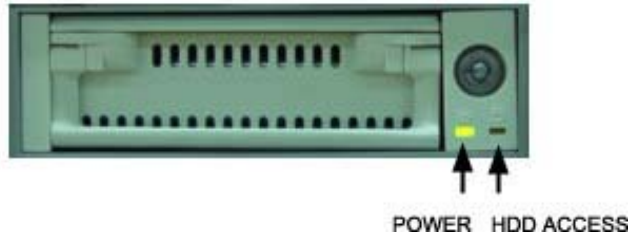
Refer to the following homepages of major hard disk manufacturers of additional information on JUMPER SETTING.

- WESTERN DIGITAL: www.westerndigital.com
- SEAGATE: www.seagate.com
- HITACHI: www.hgst.com
- MAXTER: www.maxter.com

6-3. HDD Indicator

When the POWER is on, the hard disk indicator is displayed as the chart shows.

ITEM	INDICATOR
POWER	GREEN LED
HDD ACCESS	YELLOW LED



WARNING

1. DVR must be turned off when one installs a hard disk into DVR.
2. DVR must be turned off when changing hard disk.
3. The system will recognize HDD installed only when the key of the rack must be locked.

7. NETWORKING

DVR can be connected to LAN or ADSL network and supports functions and additional features that are available on remote DVR.

7-1. NETWORK CLIENT S/W Main Features

- Remote real-time monitoring
- Remote search and playback of saved data in DVR
- Various BACKUP functions – Image data backup during remote live display or remote playback, directly download image data from a remote DVR.
- Remote setup
- Remote camera control
- Supports dynamic IP addresses

7-2. Computer System Requirements

- Operating System: Microsoft Windows 98/SE, Microsoft Windows ME, Microsoft Windows 2000, or Microsoft Windows XP
- CPU: Pentium III (Celeron) 1.6GHz or higher
- RAM: 128MB or higher

NETWORK CLIENT S/W may not operate if the VGA card in PC is outmoded or is not well-known brand.

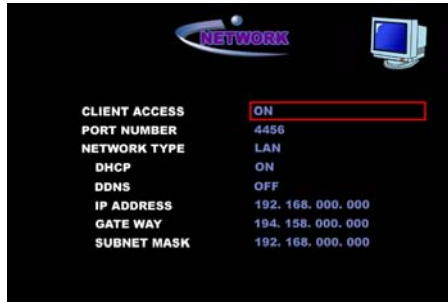
7-3. Network Setup in DVR

To make regular use of NETWORK CLIENT S/W, the network type of DVR must be set same as the connected network after setting Network Access “ON”. DVR supports various types of network including dynamic IP and static IP environments.

For details regarding network environments and related numbers, please consult the network administrator of the installed site.

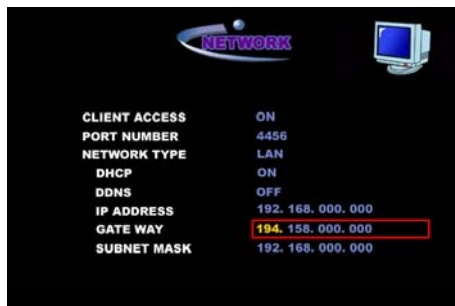
7-3-1. Network ACCESS ON/OFF

1. Select NETWORK in the SETUP menu to set up your network.
2. CLIENT S/W ACCESS can be turned ON/OFF. CLIENT ACCESS must be turned ON for network to be connected from CLIENT to DVR.



7-3-2. For LAN Users

Select LAN for NETWORK TYPE using ◀▶ buttons. Edit the IP address assigned from LAN as well as LAN's GATEWAY and SUBNET MASK. Use ▲▼ buttons to edit the numbers and use ◀▶ buttons to move from field to field.



For details regarding IP ADDRESS, GATEWAY, and SUBNET MASK, please consult the network administrator of the installed site.

7-3-3. For LAN –DHCP Users

1. If LAN is using DHCP, set DHCP to “ON”.



For DHCP installation, please refer to “4-7-3. LAN Setup –DHCP (Dynamic Host Configuration Protocol)”.

2. Set up the email address that will send out the assigned IP address of DVR, and the related Mail Server's IP address in the INFO menu.



For setting up an email address for sending out assigned IP addresses to the client user, please refer to “4-5-5. SEND MAIL (IP ADDRESS Mailing)”.

IMPORTANT
 To receive e-mail with Dynamic IP address from DVR, User has to apply IP address of Mail Server run by Manufacturer on the field of “MAIL SERVER IP”.

7-3-4. For ADSL (Dynamic IP address) Users

1. If you are using ADSL, change the NETWORK TYPE to ADSL.



Enter the service ID and password of ADSL using the keyboard shown below.



Consult the ADSL service administrator for ID and password.

3. Set up the email address that will send out the assigned IP address of DVR, and the related Mail Server’s IP address in the INFO menu.



For setting up an email address for sending out assigned IP addresses to the client user, please refer to "4-5-5. SEND MAIL (IP ADDRESS Mailing)".

IMPORTANT

To receive e-mail with Dynamic IP address from DVR, User has to apply IP address of Mail Server run by Manufacturer on the field of "MAIL SERVER IP".

7-4. NETWORK CLIENT S/W Installation and Start Up

7-4-1. NETWORK CLIENT S/W Installation

Do the following before starting installation.

- Close all programs that are operating on the computer before installing Network Client S/W.
- If there is an existing Network Client S/W on the computer, uninstall the older version.

Insert the enclosed CD-ROM into the PC's CD-ROM, and run the file named 'DVR.exe' to begin the installation of Network Client S/W. The icon shown below is created when the installation of Network Client S/W is completed.



7-4-2. NETWORK CLIENT S/W Start Up – Static IP Address

1. Run CLIENT S/W and press the SITE button. A dialogue box for entering IP address and password appears.



2. Enter the assigned IP address from DVR setup menu into the IP ADDRESS field and enter the password if DVR is using a password. After pressing OK, the LIVE screen appears after it has been connected to the network.

7-4-3. NETWORK CLIENT S/W Start Up – Dynamic IP Address

1. If DVR is connected to LAN-DHCP or ADSL, identify the IP address that has been sent to the established email address.
2. Run NETWORK CLIENT S/W and press the SITE button. A dialogue box for entering IP address and password appears.



3. Enter the IP address received through the established email address into the IP ADDRESS field and enter the password if DVR is using a password. After pressing OK, the LIVE screen appears after it has been connected to the network.

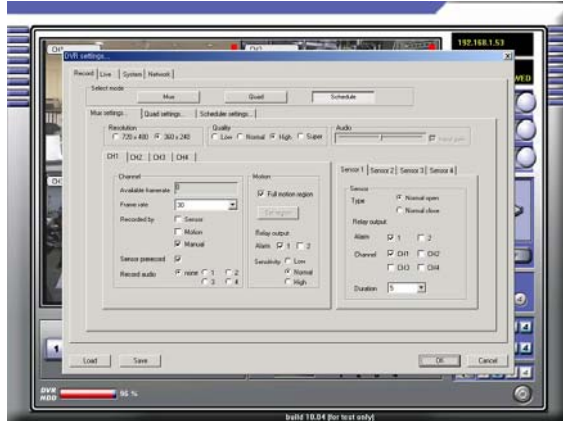
7-5.LIVE



1. Enlarge Channel
2. QUAD Screen ROTATE Screen
3. Display Live Images on Full-screen without any control tools
4. IP Address Displayed
5. Date and Time Displayed
6. SITE
7. SEARCH
8. SETUP
9. Remote Camera Control
10. Camera Channels ON/OFF
11. CONTROL (ALARM OUT)
12. SENSOR Indicator
13. Video backup during Live display
14. Still Image backup during live display
15. Select Audio
16. Terminate Network Client S/W
17. Hard Disk in Use

7-6. SETUP

Press the SETUP button on the upper right of GUI to go to remote DVR SETTING menu.



7-6-1. RECORD

A. SELECT MODE

You can select your recording mode here; the selected mode is inverted.

- MUX – Record in MUX mode (inversed during MUX recording)
- QUAD – Record in QUAD mode
- SCHEDULE – Record in SCHEDULE mode

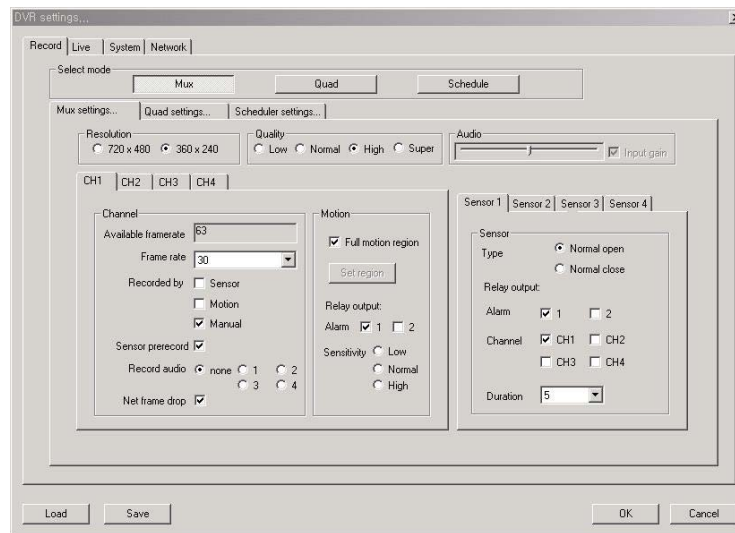


Please refer to “4-3-1. Selecting Recording Mode (QUAD, MUX, SCHEDULE)”.

B. MUX SETTING

- RESOLUTION: Select from 720 X 480 and 360 X 240
- QUALITY: Select quality among LOW / NORMAL / HIGH
- AUDIO: Setup Volume Control and INPUT GAIN
- CH1 / CH2 / CH3 / CH4
 - ✧ CHANNEL
 - ✓ FRAME RATE: Select recording frame rate
 - ✓ RECORDED BY: SENSOR, MOTION, MANUAL
 - ✓ RECORD AUDIO: NONE, 1, 2, 3, 4
 - ✓ NET FRAME DROP
 - ✧ MOTION
 - ✓ FULL MOTION REGION: Full-screen Motion Detect Mode
 - ✓ SET REGION: Inversed when motion detection region is being setup
 - ✓ RELAY OUTPUT - ALARM: Select alarm

- ✓ SENSIVITY – Select from LOW, NORMAL, and HIGH
- SENSOR1 / SENSOR2 / SENSOR3 / SENSOR4
 - ✧ TYPE: Select from NORMAL OPEN / NORMAL CLOSE
 - ✧ RELAY OUTPUT
 - ✓ ALARM: Select alarm to be set off when the sensor is activated
 - ✓ CHANNEL: Select channel to be recorded when the sensor is activated
 - ✓ DURAITON: Select the duration of recording when the sensor is activated

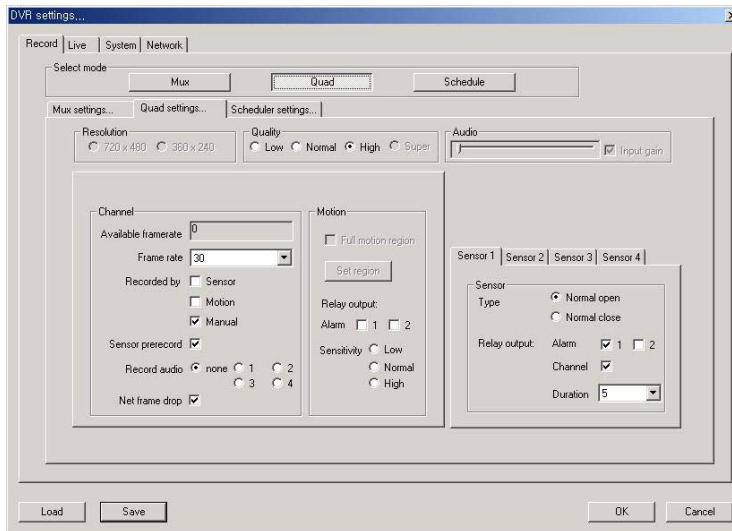


Please refer to “4-3-3 MUX Recording Mode”.

C. QUAD SETTING

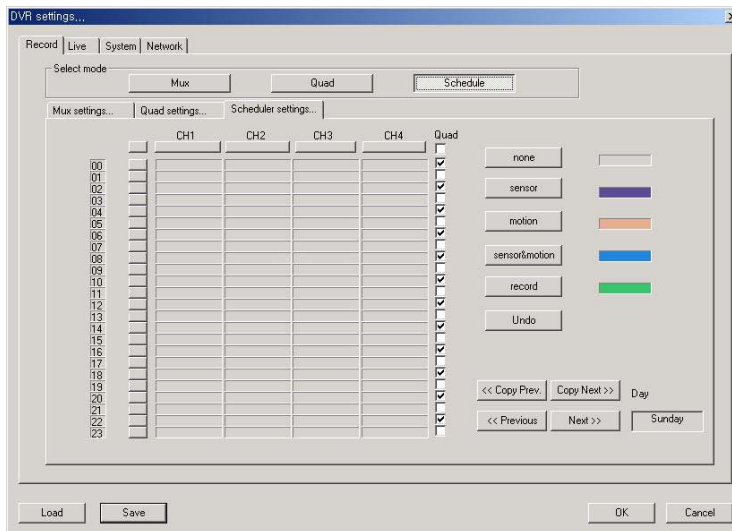
- QUALITY: Select quality among LOW / NORMAL / HIGH
- AUDIO: Setup Volume Control and Input Gain
- CHANNEL & MOTION
 - ✧ AVAILABLE FRAME RATE: Usable Frame
 - ✧ FRAME RATE: Select recording frame rate
 - ✧ RECORDED BY: SENSOR, MOTION, MANUAL
 - ✧ SENSOR PRERECORD
 - ✧ RECORD AUDIO: NONE, 1, 2, 3, 4
 - ✧ NET FRAME DROP
 - ✧ RELAY OUTPUT - ALARM: Select alarm to be set off when motion is detected
 - ✧ SENSIVITY – Select from LOW, NORMAL, and HIGH
- SENSOR1 / SENSOR2 / SENSOR3 / SENSOR4
 - ✧ TYPE: Select from NORMAL OPEN / NORMAL CLOSE
 - ✧ RELAY OUTPUT

- ✓ ALARM: Select the alarm to be set off when Sensor is activated
- ✓ CHANNEL: Select the channel to be recorded when Sensor is activated
- ✓ DURATION: Select the duration of alarm and recording time when Sensor is activated



Please refer to “4-3-2. QUAD Recording Mode”.

D. SCHEDULE SETTING



The schedule setup and usage instruction are the same as DVR. Please refer to “4-3-4. SCHEDULE Recording Mode” for more instructions.

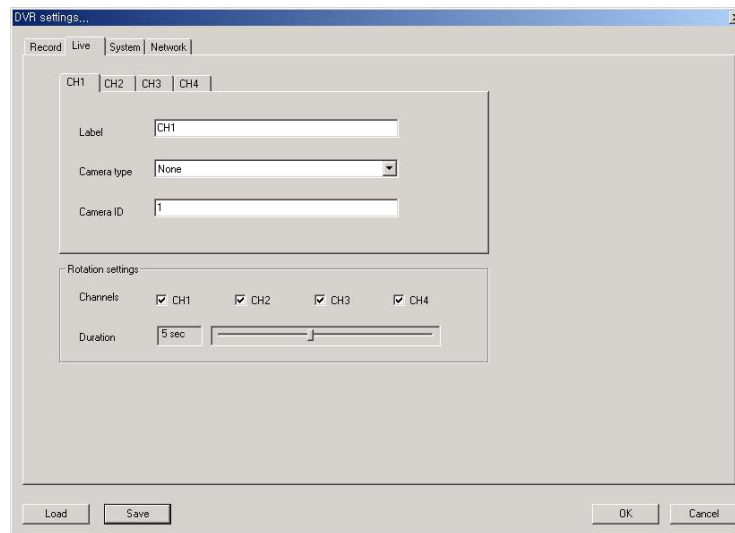
7-6-2. LIVE

D. CH1 / CH2 / CH3 / CH4

- LABEL: Show the selected channel name
- P/T/Z/F TYPE: Select the appropriate camera protocol for the channel

E. ROTATION SETTING

- CHANNEL: Select a channel to rotate
- DURATION: Select the time interval between each channel for automatic channel rotation.



Please refer to "4-2. LIVE"

7-6-3. SYSTEM

A. SYSTEM INFORMATION

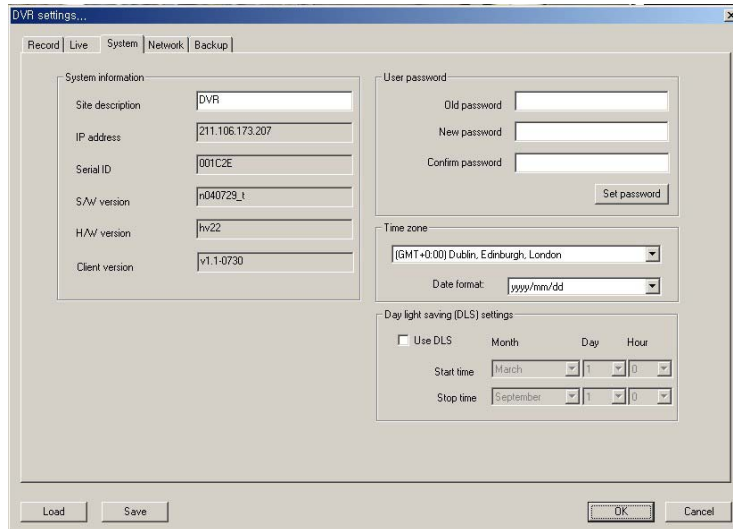
- SITE DESCRIPTION: Edit DVR information of DVR that is connected to network.
- IP ADDRESS: Show IP Address of the appropriate site
- SERIAL ID: Show the serial number for DVR that is connected to network
- S/W VERSION: Shows the S/W version of DVR that is connected to network
- H/W VERSION: Shows the H/W version of DVR that is connected to network
- Client VERSION: Show the client S/W version

B. USER PASSWORD (PASSWORD Edit Menu)

- OLD PASSWORD
- NEW PASSWORD
- CONFIRM PASSWORD

C. TIME ZONE

D. DAY LIGHT SAVING (DLS) SETTING



ADMIN password can't be amended on Network Client S/W.

7-6-4. NETWORK

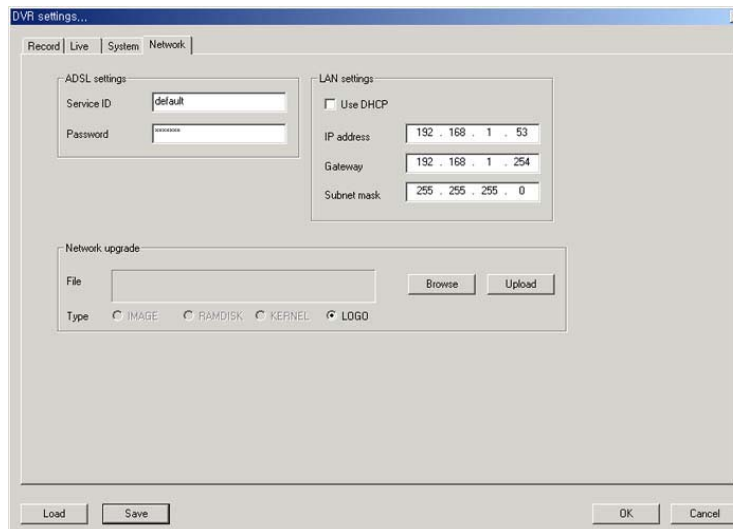
A. ADSL SETTINGS

- SERVICE ID: Enter ADSL service ID
- PASSWORD: Enter ADSL password

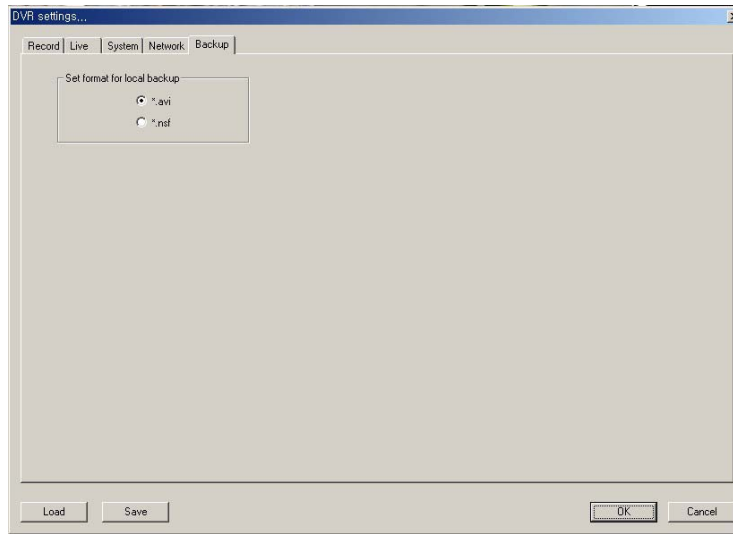
B. LAN SETTING

- USE DHCP: Select to use DHCP
- IP ADDRESS:
- GATEWAY
- SUBNET MASK

C. NETWORK UPGRADE



7-6-5. BACKUP



Available backup file format

- *.nsf – This format can be playback only in network client S/W.
- *.avi – This format can be playback only in Media Player.

7-6-6. Saving and Uploading Settings

1. Saving Settings

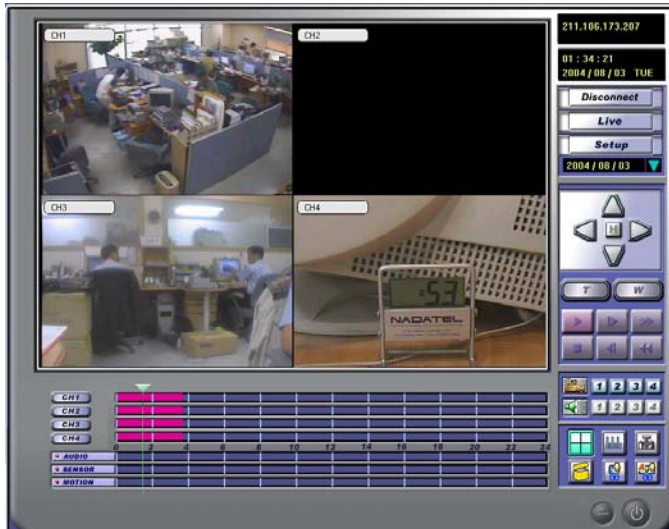
If you wish to use the current settings later on, customize the settings and press the SAVE button at the bottom left corner. Save the file on the computer. (File Format: ndc)




2. Uploading the saved settings

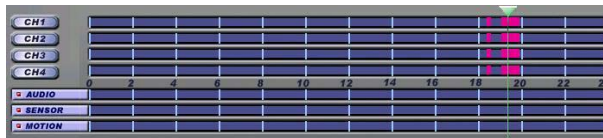
If you wish to use the saved setting, press the LOAD button on the bottom left corner. Select the setting you wish to use and the setting is applied to DVR.



7-7. SEARCH

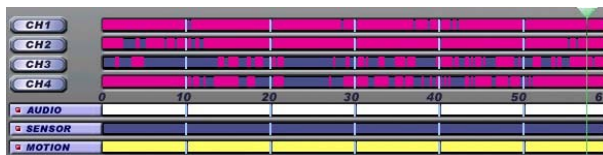


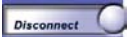
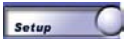
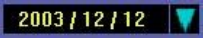

7-7-1. Buttons in Search menu







1. Enlarge the selected channel on display 
2. The Graphic Bar shows the recorded part for the day in Pink (MUX Record) and Green (QUAD).



3. Time Select Bar (Move the bar to the part you wish to play).
4. AUDIO, SENSOR, MOTION – Each bar shows audio, sensor, and motion in recording
5. PLAY button 
6. PAUSE button 
7. Indicate the 1,2 graphic by hour



8. Disconnect 
9. Button to go to Live window
10. Button to go to SETUP window 
11. Select Date for Search button 
12. Video BACKUP during playback 

13. Still image capture during playback  1 2 3 4
14. Playing audio of selected playback channel  1 2 3 4
15. 4channels simultaneous playback 
16. Browsing and playback the backup video 
17. Download still images from DVR 
18. BACKUP through Time Setting from DVR 

7-7-2. Search when DVR has two HDD

1. Press SEARCH button. Then the window will appear.



2. Select HDD to search and playback.

7-8. BACK UP

7-8-1. Video BACKUP during LIVE DISPLAY

1. During LIVE DISPLAY, press the channel button you wish to backup. The button will turn red and starts backup is proceeded.



2. Press the same button again at the point where you wish to stop BACKUP. A window where you can save the Backup Data in DVR will appear.



3. Enter file name (file format: avi) and press "Save".

NOTE

To save audio data along with video data, press and activate Audio button before pressing Video Backup button.

7-8-2. STILL IMAGE capture during LIVE DISPLAY

1. During LIVE DISPLAY, press the channel button you wish to backup.



2. A window for saving the image will appear.



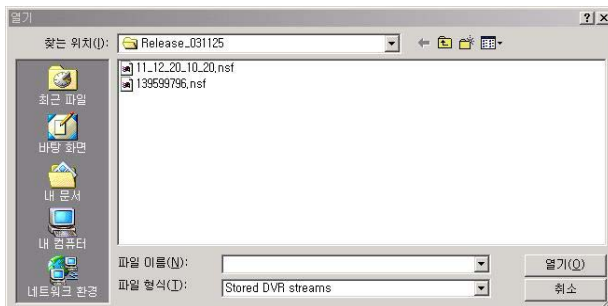
3. Enter file name (file format: bmp or jpg) and press "Save".

7-8-3 Video BACKUP during Playback

1. From the SEARCH Menu, press the channel button you wish to back up. The channel button will turn red and backup is proceeded.



2. Press the same button again at the point where you wish to stop BACKUP. A window where you can save the Backup Data on the computer will appear.



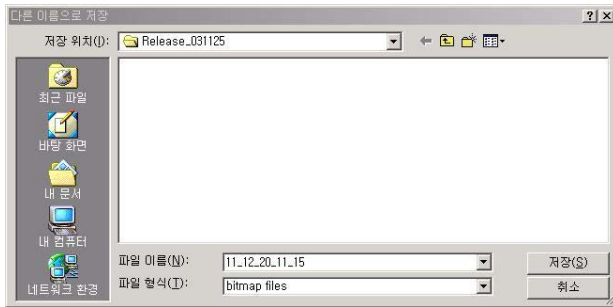
3. Enter file name (file format: avi) and press "Save".

7-8-4. STILL IMAGE capture during Playback

1. During Playback, press the channel button you wish to backup.



2. A window for saving the image will appear.



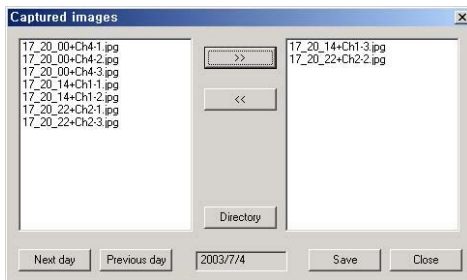
3. Enter file name (file format: bmp) and press “Save”.

7-8-5. Downloading Still Images from DVR

1. Press the following button to download the still image, which is saved in DVR, through the network.



2. When the Download window appears, select the desired file from the list on the left and move it to the list on the right. Select the folder to save from DIRECTORY and press SAVE to start downloading.

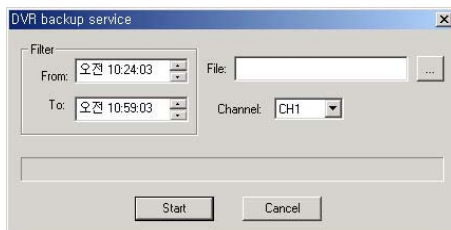


7-8-6. BACKUP through Time Setting

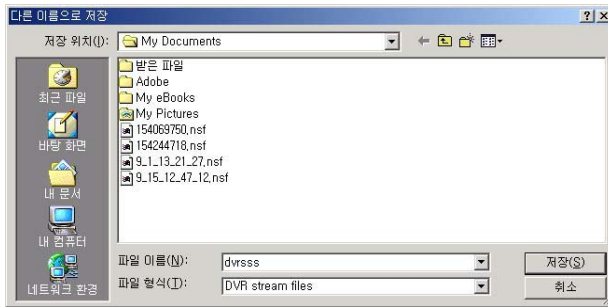
1. Press the following button to backup by setting a specified time.



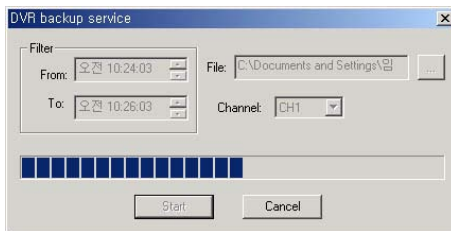
2. A window where you can select the time period will appear.



3. Select the desired time.
4. Select a folder and make a file name of backup data by pressing the BROWSE button.




5. Select the channel to backup.
6. Backup starts when you press START

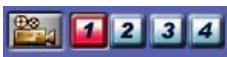


7. When BACKUP is completed, "Backup complete" will appear.

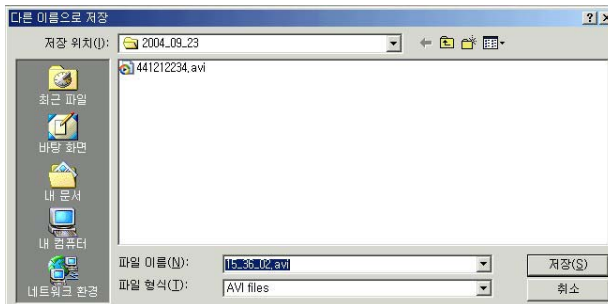


7-8-7. Converting <nsf> CD backup format to <avi> format

1. Search and playback backup file in "nsf" format. 
2. During playback, press the channel button when you wish to convert. Then button color becomes Red.



3. Press the channel button when you wish to finish converting.
4. A window for saving the image will appear.

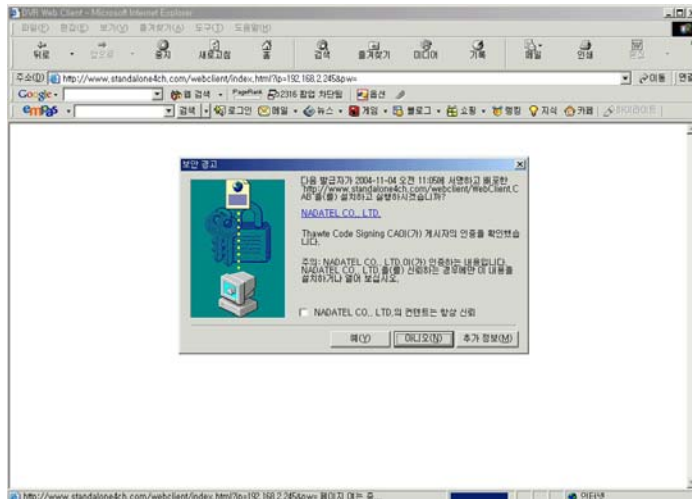


5. Enter file name and press "Save".

8. Networking by Web Browser

8-1. Download Web Browser Viewer and Connection

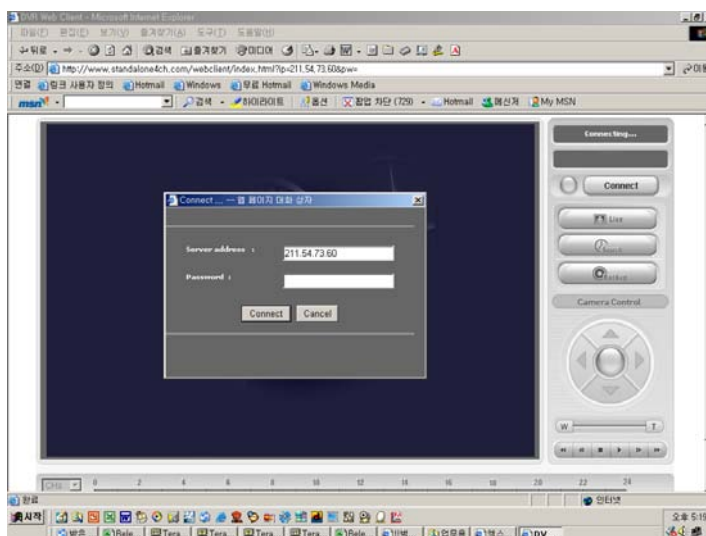
1. Enter the DVR IP address. Then the window will appear as bellow. Click “YES” to download Web Browser Viewer from the server run by the manufacturer.



NOTE

Web Browser Viewer is to be downloaded from the server run by the manufacturer, not from DVR. In other words, PC and DVR should be linked with Internet in order to use Web Browser networking.

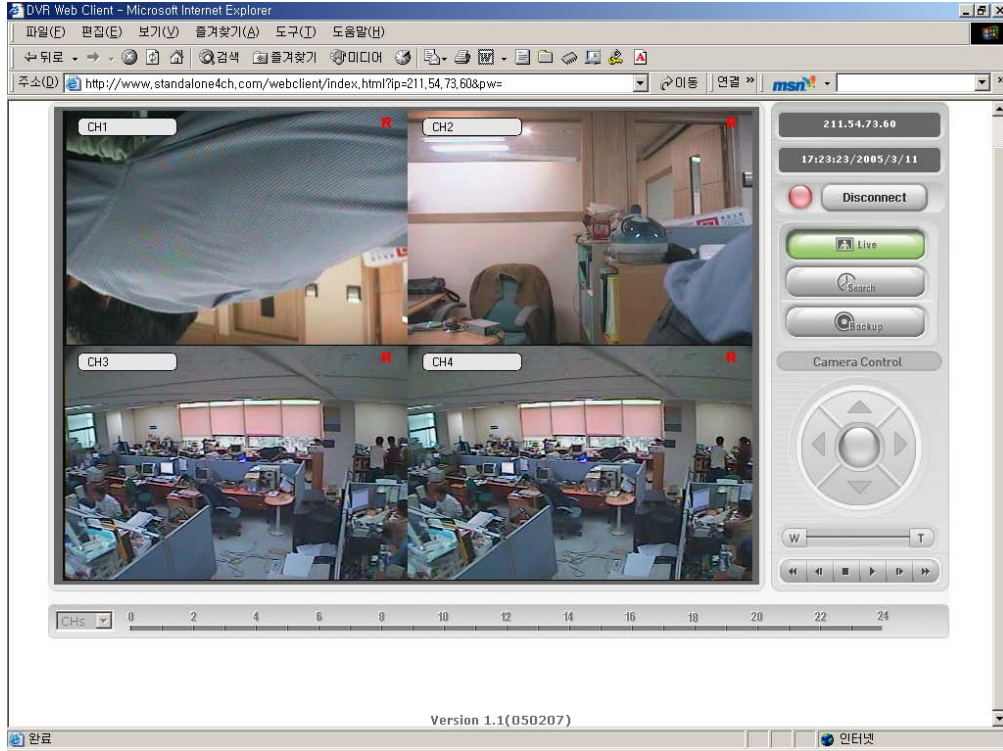
2. Web Browser Viewer will be downloaded and installed. A dialogue box for entering IP address and password will appear.



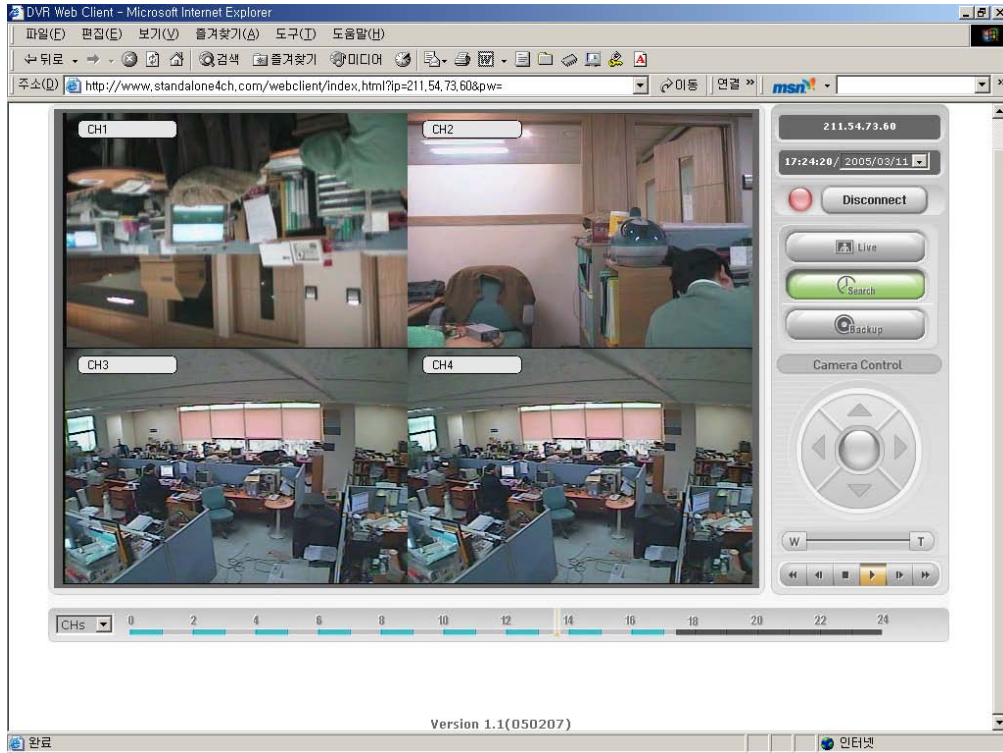
3. Enter IP address and the password and click the “Connect” button.

8-2. Main Features

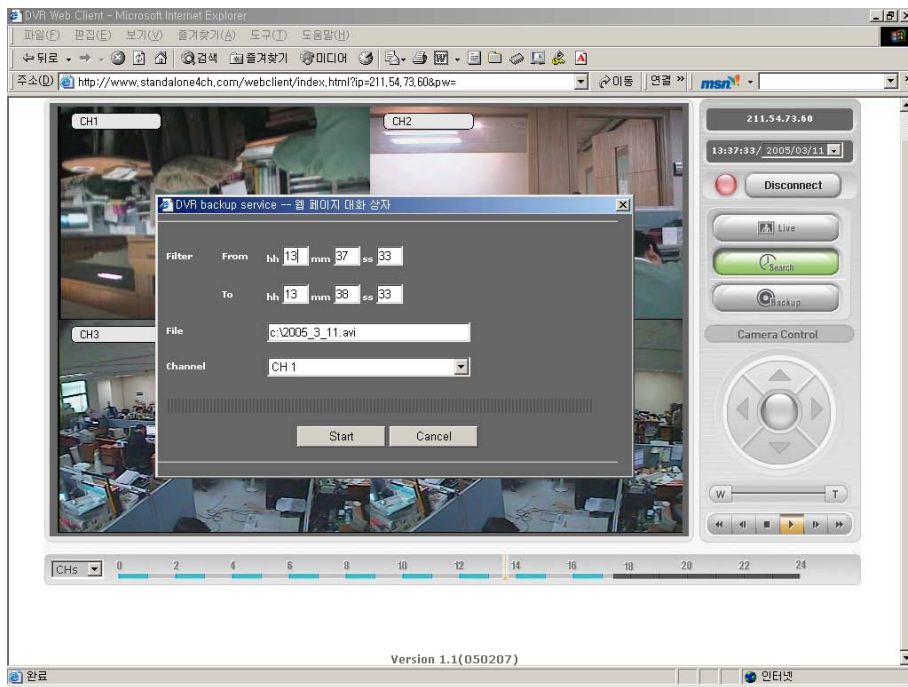
8-2-1. LIVE



8-2-2. SEARCH



8-2-3. BACKUP



9. Networking by DDNS (Dynamic Domain Name Server)

1. Check the serial number of DVR from SETUP>INFO>SYSTEM>SERIAL ID.
2. Please contact a distributor or an installer to register the DVR on DDNS Server.
3. Register your own domain name on DDNS Server.

NOTE

If your own domain name and serial ID of DVR are registered at DDNS server run by manufacturer, IP address of DDNS Server run by Manufacturer should be applied on DDNS SERVER IP filed.

If your own domain name and serial ID of DVR are registered at DDNS server run by distributor, Please ask the distributor IP address of DDNS Server and apply it on DDNS SERVER IP filed.

4. After your own domain name and serial ID of DVR are registered at DDNS server, user can access network with your own domain name.

10. Playback of local HDD in Network Client S/W

1. Take HDD out from DVR and connect it to PC as Slave.
2. Please go to CMOS setup and confirm that CMOS recognizes HDD and its size or not.
3. Save CMOS setting and boot PC.
4. Run Network Client S/W.
5. Press SEARCH button and then SITE button of Network Client S/W.
6. Type "127.0.0.1" in IP field of window.
7. All functionality of playback is the same as remote HDD search.

11. Network access beyond Router

In order to access beyond Router (Firewall), user must open 20 TCP ports for **Command level**, **Live channels**, and **Storage channels**. If these all ports are not open properly, user can not access DVR beyond a router.

If DVR sets port number with 4456 as bellow, user has to open 20 TCP ports from 4456 to 4475.



If DVR sets port number with 1111, user has to open 20 TCP ports from 1111 to 1130.

In order to access network, user has to enter "External IP Address:xxxx" (Ex. 111.222.333.444:4456) in the field of "Server address"

